

## ABSTRACT

Brittany N. Meier. THREE FACETS OF EMPLOYEE WELLNESS: THE POTENTIAL MODERATING INFLUENCES OF MINDFULNESS, PHYSICAL ACTIVITY, AND VACATION ON SELECT WORKER CHARACTERISTICS. (Under the direction of Dr. Shahnaz Aziz) Department of Psychology, May 2020.

Workaholism is well-known for the negative effects it has on workers, including poor individual health and an inability to separate oneself from work. Furthermore, a strong positive correlation between workaholism and work stress has been established. The potential stress-reducing effects of specific health-driven leisure activities (e.g., physical activities) have been discussed in numerous studies. As workaholics are unlikely to participate in non-work activities, several questions regarding the potential benefits of three leisure activities (i.e., mindfulness, physical activity, and vacation) were examined, as were motives for excessive participation in work-related activities. In the current study, 350 working adults were surveyed, and the results suggested vacation influenced the relationship between workaholism and work stress. While participation in leisurely vacation activities weakened this relationship, time pressure further strengthened it. Additionally, overall leisure participation partially mediated the relationship between workaholism and work stress. Relationships between three worker characteristics (i.e., workaholism, work stress, and work engagement), the three leisure activities, and various demographics were also considered. Implications for organizations, study limitations, and suggestions for future research are discussed.



THREE FACETS OF EMPLOYEE WELLNESS: THE POTENTIAL MODERATING  
INFLUENCES OF MINDFULNESS, PHYSICAL ACTIVITY, AND VACATION ON  
SELECT WORKER CHARACTERISTICS

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Brittany Meier

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By

Brittany N. Meier

APPROVED BY:

DIRECTOR OF THESIS

\_\_\_\_\_  
Shahnaz Aziz, Ph.D.

COMMITTEE MEMBER

\_\_\_\_\_  
Karl L. Wuensch, Ph.D.

COMMITTEE MEMBER

\_\_\_\_\_  
Christyn L. Dolbier, Ph.D.

CHAIR OF THE DEPARTMENT OF PSYCHOLOGY

\_\_\_\_\_  
Alan J. Christensen, Ph.D.

DEAN OF THE GRADUATE SCHOOL

\_\_\_\_\_  
Paul J. Gemperline, Ph.D.

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## CHAPTER I: INTRODUCTION

Individuals engage in *leisure activities* for various reasons, including disengagement from work, personal improvement, and as a means to cope with stress. Although some leisure activities are associated with physical activity, this construct encompasses a much broader span of pursuits, including mental and social benefits (Knecht, Wiese, & Freund, 2016; Trenberth & Dewe, 2005). By definition, leisure activities require separation from work (Newman, Tay, & Diener, 2014; van Wijhe-van Iperen, Schaufeli, & Peeters, 2010), though employers are in a position to promote employee participation in these activities. As defined by the World Health Organization (WHO) in 1948 (Huber et al., 2011), health is still recognized as more than freedom from illness. Being healthy requires total well-being in three areas, namely, mental, physical, and social (“Constitution of the World Health Organization,” 2006). Huber et al. (2011) called for redefining health but agreed the three aforementioned domains were still appropriate.

The breadth of this subject area allows for further exploration into the benefits and interactions of leisure activities related to each motivational health domain. Namely, the effects of participation in 1) *mindfulness*, 2) *physical activity* and 3) *vacation*, are explored in the current study. While each of these activities has the potential to offer mental, physical, and social benefits, mindfulness is commonly associated with mental benefits, physical activity with physical, and vacation with social.

The definition outlined by the Constitution of the World Health Organization (2006) proposes mental, physical, and social health are important to most individuals. This notion suggests value could be gained by exploring the effects of activities driven by these factors, though it is important to acknowledge not all workers can easily engage in leisure activities, either due to internal or external factors (Buettner, Shattell, & Reber, 2011). With work and

personal obligations, employees may not prioritize leisure activities which could afford benefits (e.g., increased job performance, lower health risks) that contribute to decreased healthcare costs for the organization (Hamar, Coberley, Pope, & Rula, 2015). This provides a reason for organizations to encourage all employees to participate in leisure activities. Thus, in the current study, we look to evaluate the potential influence of leisure activities on worker characteristics that may have positive or negative outcomes for employees and organizations.

Some organizations are already working to combat stress by enacting comprehensive employee well-being programs, some of which encourage participation in leisurely activities (Agarwal, Bersin, Lahiri, Schwartz, & Violini, 2018). As discussed by MedVet's Chief Human Resources Officer, Maura Stevenson (2019), veterinarians experience high levels of work-related stress. She further emphasized the importance of helping veterinary employees manage stress and cited the *Pause for PAWS* program, which lists "practice mindfulness" as step number one, followed by emphases on acceptance, collaboration, and communication. However, there appears to be a disconnect between what organizations are offering and what is most valuable to employees (Agarwal et al., 2018). These authors noted two examples of valued, but underutilized, opportunities—designated wellness spaces within office buildings and reimbursement for wellness-related expenses. This suggests both an organizational interest and employee need for more comprehensive employee well-being programs exist.

With the current study, we hope to present a more complete picture of the potential preventative and supportive influences of health-related leisure activities. The influences of these activities will be considered with reference to three specified worker characteristics (i.e., workaholism, work stress, and work engagement), each of which potentially affects worker productivity, health, and well-being, in addition to overall organizational wellness. A better

understanding of the relationships between these factors could provide powerful insights to improve the health and wellness of employees experiencing each worker characteristic which, in turn, may be useful when developing comprehensive employee wellness programs. There is widespread support for the idea that leisure activities can positively influence workers and could be utilized in employee wellness programs. For example, Meijman and Mulder (1998) first proposed the effort-recovery (ER) model which suggested effort, or the amount of energy expended on a task, is an important consideration when assessing the potential benefits of leisure activities. Identification of leisure activities that vary in intensity (e.g., practicing meditation is less intense than playing soccer) and are related to the three aspects of overall health could be of value, especially for organizations whose employees operate in high stress roles. For example, employees in stressful roles are known to benefit from participating in low effort leisure activities (Sawhney, Jennings, Britt, & Sliter, 2018). An explanation for this finding may come from the job demands-resources (JD-R) model, which asserts resources (e.g., relaxation obtained from leisure activities) help employees cope with the high demands of stressful jobs (Bakker & Demerouti, 2007). Similarly, Cunningham (2019) noted the greatest benefits come from activities aligned with individual characteristics. This notion supports the theory of person-recovery fit, which explains not all individuals benefit from the same types of recovery activities.

### **The Influence of Work Stress, Workaholism, and Work Engagement**

Workaholism and work stress are often presented as negative work-related concepts, while work engagement is discussed in a more favorable manner. Regardless, each characteristic can influence the overall performance and success of both employees and their organization. As a result, it is beneficial to consider how workplaces can promote and support positive employee behaviors and attitudes, while reducing negative ones. For example, it is important for

organizations to recognize personal resources and individual perceptions of control (e.g., optimism; Hobfoll, Johnson, Ennis, & Jackson, 2003) contribute positively to individual work engagement and goal attainment. Further, engaged workers have been identified as better performers at work, when compared to non-engaged colleagues (Bakker, Schaufeli, Leiter, & Taris, 2008). In addition to evaluating these characteristics in a corollary manner, this study considers how worker characteristics may be moderated by participating in health-driven leisure activities.

**Work stress.** Defined simply, work stress is a physiological and psychological response to inconsistencies between work demands and available resources (Ganster & Schaubroeck, 1991). While not as prominent in recent research, the person-environment (PE) fit model asserts employees experience the greatest benefits from roles whose outcomes align with individual motives, while a mismatch between personal and environmental factors contributes to greater stress (Caplan, Cobb, French, Harrison, & Pinneau, 1975). Cunningham (2019) provided an example of this idea, namely that introverted individuals who operate in extraverted roles need less socially demanding activities to recover.

This is important as employees typically face daily pressures from their supervisors, colleagues, and even themselves, with somewhat limited ability to control their overall situation (Bostock, Crosswell, Prather, & Steptoe, 2018). Volpone's (2019) research noted a staggering 40% of United States employees reported working in very or extremely stressful jobs. Work stress has repeatedly been connected to negative health outcomes including anxiety, obesity, and cardiovascular disease, as well as a reduction in productivity and an increase in organizational costs (e.g., Bostock et al., 2018; Gerber & Pühse, 2009; Wolever et al., 2012). While some implications of work stress are immediate (e.g., anxiety), others may compound over 20-30 years



and contribute to reduced health and well-being in older age (Cunningham, 2019).

Self-help books, such as *The Anxiety & Phobia Workbook* by Bourne (2015), are thriving from opportunities to recommend the supposed best methods to cope with stress. This particular author suggests the inclusion of mental health days, self-care, recreational activities, and distraction from work and life stressors, to best manage one's stress (Bourne, 2015, p. 247). Essentially, Bourne (2015) recommends involvement in mental, physical, and social activities may be the best means to reduce and prevent overall stress. As the spotlight on work stress and its many drawbacks glows brighter, the focus has shifted to how employers and employees can manage these concerns.

**Workaholism.** Workaholism was first described by Oates (1971) as an irresistible urge to work, like an addiction, that interferes with one's life outside of the workplace. Since then, researchers have become more insightful about workaholism and the best ways to measure it. For example, Spence and Robbins (1992) identified three subcomponents of workaholism, namely work involvement, drivenness to work, and work enjoyment. Aziz and Zickar (2006) expanded upon this idea by noting it is a syndrome characterized by a high work involvement, high work drive, and low work enjoyment. More recently, Clark, Michel, Zhdanova, Pui, and Baltes' (2016) meta-analytic review of the workaholism literature further refined the definition, conceptualizing it as a series of addictive behaviors based on internal drives to work, difficulty disengaging while not working, and going above the requirements of one's role, regardless of what consequences may occur. Consensus in the literature denotes workaholism is the compulsive need to work excessively hard (Clark et al., 2016).

Even when considering the influences of age and gender, among other demographic constructs, it is clear a negative relationship exists between workaholism and individual health

(Aziz, Wuensch, & Duffrin, 2015). Aziz et al. (2015) found that 36.8% of their study participants reported experiencing one or more of several stress-related illnesses (e.g., heart disease, mental illness, high cholesterol), with high blood pressure receiving the highest report rate (i.e., 21.8%). Further, a positive correlation was established between workaholism and stress-related illness, with a 1-point increase in one's score on the selected workaholism measure indicating a 2.245 times greater chance of reporting at least one stress-related illness.

It is not surprising workaholism is related to poorer individual health, as Clark et al. (2016) noted workaholics are unlikely to engage in regular or effortful activities outside of work. Not only are workaholics recognized for their compulsive work behaviors and obsessive work-related thoughts, they are known to allow work behaviors to be excessive, or extend far beyond typical expectations (Mazzetti, Schaufeli, & Guglielmi, 2018). Sonnentag and Bayer (2005) found it was difficult for employees to separate themselves from the mental stressors of work while at home. With knowledge of workaholics' tendencies to obsess over their work, it makes sense for them to experience even greater difficulty disconnecting from work to engage in healthy behaviors. Unfortunately, it appears these difficulties may be exacerbated by supervisory support for workaholic tendencies. According to Clark et al. (2016), workaholics are no more productive than other employees. Additionally, poorer physical and mental health are common among workaholics and may be costly to organizations (Clark et al., 2016). Specifically, healthcare costs may provide a heavy burden for both employers and employees (Cunningham, 2019). Since substantial concerns regarding the health-related influences of workaholism and work stress exist, it seems appropriate to further explore potential positive outcomes of worker characteristics, such as those associated with work engagement

**Work engagement.** Work engagement is a worker characteristic defined by enjoyment in

one's work, greater abilities to manage work-related demands, and feelings of invigoration from and attachment to work-related activities (Schaufeli & Bakker, 2004). van Beek, Taris, and Schaufeli (2011) defined it as a drive to work excessively, motivated by internal feelings of satisfaction, and enjoyment obtained by time spent working. For measurement and conceptual purposes, work engagement is presented as having three subcomponents (i.e., vigor, dedication, and absorption) which suggest engaged workers will recover quickly from work-related stress, find their work to be interesting, and be positively consumed by work-related tasks (Schaufeli & Bakker, 2004). Further, vigor refers to an employee's feelings of stimulation and excitement when completing work-related tasks, as well as possessing a willingness to continue working, even when difficulties arise. Dedication describes an employee's belief that their work is worthwhile and captures the sense of pride one gains from contributing to and completing tasks. Absorption suggests workers cannot easily separate themselves from work activities, as they may be positively consumed by their work. These positive aspects have been noted by various researchers (e.g., van Beek et al., 2011) who posited, compared to other workers, engaged workers are of greater value to employers because they are less likely to experience the ill physical and mental health effects associated with excessive work. Similarly, Bakker et al. (2008) identified a positive correlation between work engagement and job performance. As such, work engagement tends to be viewed in a more positive light than work stress and workaholism, and there is value in comparing each of these characteristics.

While some studies have noted similarities between workaholism and work engagement, many research teams identify them as distinct characteristics (e.g., Di Stefano & Gaudiino, 2019). This includes research by Bakker et al. (2008) who differentiated the two concepts by the underlying force driving one's work; for workaholics, this is a compulsion, whereas for engaged

workers, the enjoyment of working is a strong driving factor. Van Beek, Hu, Schaufeli, Taris, and Schreurs's (2012a) research indicated clear differences between the two concepts when low correlations between workaholic tendencies and work engagement, as well as their components, were observed. Further research by van Beek, Taris, Schaufeli, and Brenninkmeijer (2012b) identified an underlying motivational difference between workaholics and engaged workers. That is, workaholics work as a function of their desire to avoid negative outcomes and goal misalignment (i.e., prevention), while engaged workers work to experience the positive outcomes associated with their work and goals (i.e., promotion).

It is understood that engaged workers are better able to manage the demands of work (Schaufeli & Bakker, 2004), while stressed workers experience physiological and psychological responses to job demands that exceed personal resources (Ganster & Schaubroeck, 1991). This suggests a negative correlation between the two characteristics exists, a relationship that was confirmed by Byrne, Peters, and Weston (2016). In their research, Byrne et al. (2016) identified negative correlations between perceived stress and work engagement, as well as perceived stress and perceived supervisory support. They also found a positive correlation between perceived supervisory support and work engagement. Assuming Ganster and Schaubroeck's (1991) assertion that stress has both physical and psychological effects on workers, this finding suggests healthy factors (e.g., supervisory support) have the ability to reduce stress, potentially influencing greater work engagement (Byrne et al., 2016). Furthermore, ten Brummelhuis and Bakker (2012) highlighted that, for a sample of nurses, participation in leisurely activities has a positive relationship with increased work engagement during the following day. Specifically, participating in leisurely activities, including those categorized as physical (e.g., exercise), social (e.g., meeting with family/friends), and low-effort activities (e.g., reading), was shown to

increase next-day vigor. Alternatively, taking part in work-related or household tasks (e.g., cleaning) during non-work time did not afford employees an opportunity to fully disconnect from work and, thus, provided no enhancement in next day engagement.

### **Defining Different Forms of Leisure Activities**

Upon hearing the term *leisure activities*, one may envision interests regarded as being universally relaxing, for example, a stroll along the beach, a soak in a warm bubble bath, or a lazy Sunday afternoon out golfing. However, leisure activities may also involve actions such as cheering on your favorite football team with 100,000 of your closest friends (i.e., fans of your favorite team), running for miles on a wooded trail, or blasting music during a long drive. Voss (1967) described leisure activities as those involving choice without feeling bound or forced to engage in events.

Although leisure is a term sometimes associated with physical activities, these are not the only pursuits that can be leisurely (Knecht et al. 2016). In addition to diversity in the activities themselves, the goals driving participation and potential outcomes span great breadth. These endeavors afford more than simple relaxation, by enhancing productivity (e.g., Bourne, 2015, p. 425), personal satisfaction (e.g., Knecht et al., 2016), and offering numerous mental and physical health outcomes (e.g., Aziz et al., 2015). For these reasons, it is worthwhile to explore the potentially moderating effects of activities based on mental, physical, and social motivations.

Because leisure encompasses a variety of activities and drivers, it is worth noting that allocating non-work time to their pursuit is also necessary (Newman et al., 2014). Reasons underlying leisure participation are numerous and include pursuit of non-work activities as forms of enjoyment, for competitive purposes, and as a way to help others (Trenberth & Dewe, 2005). Some activities, like mindfulness, provide skill development opportunities that can be transferred

to the workplace. Purposefully and conceptually, leisure activities may vary among individuals. Structural and subjective definitions are used to identify activities as being leisurely, either by the amount of time and frequency of engagement, or via personal perceptions and experiences, respectively (Newman et al., 2014). A greater understanding of leisure benefits can be obtained by exploring the differences between the following three activities of interest in the current study.

**Mindfulness.** Mindfulness is recognized as conscious state during which non-judgment, acceptance, and awareness of present experiences are practiced (Bostock et al., 2018; Fisher, Kerr, & Cunningham, 2017; Wolever et al., 2012). The stance of non-judgment helps to interrupt reactive cognitive and emotional processes. Individuals bring an attitude of acceptance to whatever is present, whether pleasant, unpleasant, or neutral, indicating mindfulness is not a relaxation method. This is important as mindfulness is practiced on the principle that participants have no state or outcome-based goals in mind. Although mindfulness-based activities are broad, ranging from a focus on the breath and light stretching, as seen in some yoga practices, to guided or independent meditation, mindful walking, and mindful eating, each activity is approached with the same awareness and stance of non-judgment and acceptance (Shearer, Hunt, Chowdhury, & Nicol, 2016; Smith, Hancock, Blake-Mortimer, & Eckert, 2007). The list of examples presented is by no means exhaustive, although it provides a solid base for conceptualizing the activities involved in mindfulness, some of which may be structured or “formal” (e.g., setting a time to participate in a 20-minute meditation) while others are unstructured or “informal” (e.g., bringing mindful awareness to everyday activities). One of the greatest takeaways from the current literature is the importance of remaining free from judgment – whether that be toward the self, others, or situational factors – in order to accept current

emotions, thoughts, and/or sensations (Bostock et al., 2018; Fisher et al., 2017; Wolever et al., 2012). Because mindfulness-based practices are related to positive outcomes and are so effective, several mindfulness-based interventions (MBIs) have been created to enhance it in the workplace (Tomlinson, Yousaf, Vitterso, & Jones, 2017).

For example, yoga has emerged as a popular exercise that has the potential to be a mindfulness-based activity depending on the instruction provided. Each form of yoga incorporates non-judgmental awareness of the breath and body, and has become a common extracurricular activity. Additionally, the influence of many distinct forms has been explored in various occupational settings. Each type of yoga allows practitioners to pursue specific goals, movements, and outcomes. Hatha yoga has been most commonly assessed in recent literature, as it is viewed as one of the more straightforward practices. By emphasizing awareness on one's breath, posture, and internal centering, with an instructor who facilitates bringing a stance of non-judgment and acceptance to this experience, hatha yoga seems to present an accessible means by which employers could introduce mindful practices into the workplace (Gura, 2002; Smith et al., 2007; Wei, Kilpatrick, Naquin, & Cole, 2006).

**Physical activity.** Physical activity, similar to the overall leisure category, is flexibly defined. Generally, physical activities are viewed as personal or group experiences during which energy is expended by moving skeletal muscles (Caspersen, Powell, & Christenson, 1985). It is also typically believed that increased participation will provide physical and mental benefits. Although similar in nature to physical activity, exercise is a subcategory of physical activity. As stated by Caspersen et al. (1985), physical activity spans a wide variety of activities, including those that may be categorized as sports, conditioning, and household, occupational, or other activities. These activities may be performed out of choice or necessity and may vary

significantly in intensity. Similarly, exercise is typically structured, repetitive, and purposeful in improving or maintaining physical fitness. Multiple researchers have noted a potentially bi-directional relationship exists between stress and exercise (Burg et al., 2017; Gerber & Pühse, 2009). When comparing exercise and physical fitness to stress reduction, it is thought people who exercise are less susceptible to negative experiences, like stress, and individuals who experience less stress may be more inclined to participate in exercise and fitness-based activities (Gerber & Pühse, 2009).

In addition to exercise-based assessments, some researchers (e.g., Rosenberg, Bull, Marshall, Sallis, & Bauman, 2008) have explored the effects of sedentary behaviors, and have noted these differ from general inactivity. Although sedentary behavior seems to be the opposite of exercise, Rosenberg et al. (2008) found participants who self-reported sitting the most were equally as likely to be classified as active individuals, as those who reported sitting the least. Despite spending at least 48 hours per week sitting or engaged in other sedentary behaviors, on average, participants spent at least 63% of their leisure time being physically active (Rosenberg et al., 2008). This suggests individuals who underestimate time spent sitting may be as likely to maintain regular involvement in non-exercise physical activities (e.g., yardwork, housework) as other individuals.

**Vacation.** While mindfulness and physical activity can be engaged in at any time during a typical week, vacation often requires more structure and planning. Nonetheless, it fits within the greater scope of leisure activities, as defined by Knecht et al. (2016). Most commonly, the literature concerning vacation regards it as a period of time spent away from work, either at one's place of residence or some further destination (e.g., Etzion, 2003). Still regarded in recent years, Lounsbury and Hoopes (1986) provided more specificity when conceptualizing vacation



over 30 years ago. Namely, their research defined vacation as a sustained period of time, ranging from several days to several weeks, during which an employee elects to take time off from work. The broad range they provided is supported by Etzion (2003), who recognized vacations as lasting a minimum of seven days.

Etzion (2003) evaluated the outcomes of vacation relative to two determined lengths of time away, with the majority of employees staying within a 30-minute radius of their place of employment. This design further defined short and long vacations as those lasting 7-10 days and 10 or more days, respectively, perhaps so as to not include naturally occurring, 3-4-day holiday weekends as vacations. That said, it is not uncommon for employees to reference long weekends as vacations or mini-vacations when traveling. Based on substantial support, it appears vacation is best conceptualized as a (minimally) multiple day span of time away from one's workplace.

These are only a few of the empirical definitions of vacation length. Other researchers have presented a rationale for vacations lasting anywhere from three days (e.g., a long weekend) to several weeks or more (Pines & Aronson, 1988). As there is such variety in the appropriate and minimum lengths of vacations, additional research needs to be conducted to best define it. Because different industries provide various opportunities for taking vacation time (e.g., academic and government employees receive 3-day weekends for federal holidays but may have less flexible schedules than employees in other industries), it seems appropriate to conceptualize vacations as lasting a minimum of four days, so as to not include naturally occurring breaks from work. Some jobs require work over the weekends, while others do not, so time off during the weekend will be considered eligible to be included in vacation length.

### **Work-Related Outcomes Associated with Leisure Activities**

Leisure activities have benefits and drawbacks that should be considered ahead of time,

including potential financial or personal implications. While they offer numerous benefits, employees should be aware there are potential drawbacks associated with participating in one or more of the activities discussed in the current study.

**Benefits of leisure activities.** When evaluating the effectiveness of leisure activities at reducing stress, boosting work engagement, and tempering workaholic tendencies, it is important to remember there is no one cure-all (Fisher et al., 2017). Given the diverse nature of leisure activities and their associated benefits, many researchers support this statement (e.g., Kühnel & Sonnentag, 2011). Also aligned with this theory, the DRAMMA model is designed around five mechanisms thought to influence the effects of leisure activities on subjective well-being. Newman et al. (2014) identified these five mechanisms as: 1) detachment-recovery, 2) autonomy, 3) mastery, 4) meaning, and 5) affiliation. They theorized greater benefits can be experienced when one participates in leisure activities aligned with multiple mechanisms, though the idea that employees may benefit from activities with a detachment-recovery focus was also supported. As Etzion, Eden and Lapidot (1998) explained, this is because detachment-recovery allows employees a chance to disengage from work-related matters and function without these concerns in mind, thus affording greater potential for recovery and relaxation.

It seems that regardless of the mechanisms aligned with different activities, regular involvement will provide relatively stable outcomes over a one-year period (Knecht et al., 2016). This finding suggests individuals who experience positive outcomes related to health, well-being, stress, and other key wellness areas, will experience these effects consistently throughout the year, while staying involved in their activity (or activities) of choice. In addition to reduced perceptions of stress and higher work engagement, employees may experience greater sleep quality, reduced physical tension, and fewer reports of illness related to stress (Aziz et al., 2015;

Wei et al., 2006; Wolever et al, 2012).

Mindfulness, physical activity, and vacation all have potentially positive influences on workers. Fisher et al. (2017) emphasized mindfulness's ability to reduce perceived workload, limit stress-related physical and mental health outcomes, and boost coping abilities while at work. This may be attributed to the flexibility of engagement in mindfulness. Because mindfulness can be approached in structured and unstructured ways, related practices are accessible to all employees and may be particularly beneficial to those in high stress or difficult roles (Fisher et al., 2017). This is supported by the finding employees who were deemed highly stressed (as determined by their scores on the 10-item Perceived Stress Scale), experienced significant reductions in self-reported stress and increases in sleep quality after engaging in 12 weekly, 1-hour long, in-person or online mindfulness or viniyoga sessions (Wolever et al., 2012). Interestingly, mindful individuals experienced greater, though insignificant, differences in levels of stress than their non-mindful counterparts. This may be due to the naturally accepting goals of mindfulness, such as the allowance of emotions to occur without judgment, suppression, or avoidance (Shearer et al., 2016).

Other researchers have found positive outcomes associated with yoga, which may be a factor in the amount of prior experience an individual has with yoga (Wei et al., 2006). Yoga allows one to engage in practices, such as breath and posture consciousness, which can be easily and practically transferred to the workplace. Specifically, employees can remain attentive to physical experiences occurring at their workstations or in meetings, while offering added benefits such as feelings of relaxation and positive physical health outcomes (Gura, 2002). Thus, regardless of perceived stress level or time constraints, mindfulness can increase productivity and alertness (Bourne, 2015, p. 425) among a wide range of employees.

Physical activity is often recognized for the physical and mental benefits it can offer participants, as well as its necessity to sustain life (Caspersen et al., 1985). Employees who participate in about 30 minutes of daily exercise, 24 of which are done at least moderate intensity, are likely to experience a significant decrease in their perceived stress levels during the evening, a feeling that carries over into the following morning (Burg et al., 2017). This result suggests exercise may be an especially worthwhile activity for employees who experience stress.

A standing theory is stressed employees will be less likely to engage in physical activities, specifically exercise, compared to their less stressed counterparts. Burg et al. (2017) found information to discount this notion, noting only a 20% decrease in exercise participation when individual stress increased by five points on an 11-point measurement scale. Additional research shows exercising during times of stress may be helpful in reducing overall stress and does not increase perceived stress (Gerber & Pühse, 2009). Exercise participation and benefits are not strictly explored with regard to work stress. Physical benefits, such as reductions in stress-related illnesses, have also been noted for compulsive workers who engage in exercise (Aziz et al., 2015), suggesting physical activity may moderate the relationship between stress and workaholism.

Vacations offer positive outcomes to employees who elect to take them, though there is still room for further exploration into their sustained effects following return to work. As described in multiple sources, vacations provide employees opportunities to boost work engagement, reduce stress, and experience other work- and health-related benefits (e.g., de Bloom, Radstaak, & Geurts, 2014). This supports Westman and Eden's (1997) claim that all employees are likely to experience relief from stress while away from work, and suggests an association exists between vacation participation and the different domains of health. Although

social health may not be the primary motive underlying vacation participation, it is one of several reasons cited by employees. It is also worth noting compulsive and non-compulsive workers engage in similar amounts of work while on vacation (de Bloom et al., 2014), which further supports that all employees can benefit from pleasurable vacation activities.

Although regular involvement in leisure activities may help to maintain positive vacation effects, short-term breaks cannot provide benefits to the same extent vacations can (Kühnel & Sonnentag, 2011). Vacation time provides employees relief from the pressures felt within their day-to-day work environments and opportunities to connect socially with friends, family, or even strangers. Time away from work also allows for short-term decreases in perceived stress and emotional exhaustion, as well as increases in post-vacation productivity and work engagement (de Bloom et al., 2014; Etzion, 2003; Kühnel & Sonnentag, 2011). Knowing these benefits, one may wonder why an individual would not engage in leisure activities.

**Drawbacks of leisure activities.** Although leisure activities offer employees various benefits, it is possible to experience negative outcomes as a result of engaging in such pursuits. Specifically, Knecht et al. (2016) noted individuals may experience increased work-life-family conflict by spending too much time, money, or attention on leisure activities, and as a result, may experience greater levels of perceived stress. For employees experiencing familial or financial hardships, the compounding effect of stressors could be especially detrimental. For example, workaholics are poised to experience both the greatest positive and negative outcomes associated with leisure activities. When considering the vacation experiences of workaholics, there is potential to feel great relief from having an extended break from work, though more often, immense concern about not working could lead to an increase in stress and a sort of relapse upon their return to work (de Bloom et al., 2014). This consequence, compounded with the potential

negative effects of overspending or further limiting time engaged with family, could result in especially poor outcomes.

While these emotions may be felt prior to one's vacation, there are potential drawbacks associated with the occurrence of negative experiences during vacation. That is, experiencing one or more negative events during one's vacation has been shown to lower the upper limit for possible benefits to well-being, though positive outcomes are still possible (de Bloom et al., 2011). Notably, symptoms of distress are common outcomes for individuals participating in new activities (Wei et al., 2006). For example, employees practicing yoga may experience greater stress as they take the time and effort to learn new poses and sequences (Smith et al., 2007). Feelings of distress are also noted in other leisure activities. Drawing from the JD-R model (Bakker & Demerouti, 2007), individuals may experience negative personal outcomes (e.g., frustration) while exercising and may not be able to appropriately address these concerns, thus reducing the positive influence exercise may offer (Nägel, Sonnentag, & Kühnel, 2015). Likewise, exercise-related injuries may be more common among men than other injuries and may counteract the positive influence of exercise, mentally and socially (Uitenbroek, 1996). While these drawbacks may seem minute in comparison to the benefits associated with leisure activities, it is important to consider not all individuals react to situations in the same way. Thus, discussing potential negative outcomes is worthwhile.

### **The Potential Compounding Effects of Leisure Activities**

Voss's (1967) non-binding definition of leisure activities allows for overlap between the different activities explored in the current study, and others. Some researchers have even recommended combining different activities to experience the greatest benefits. Fisher et al. (2017), for instance, explored mindfulness and noted the greater potential outcomes associated

with implementing it alongside other stress management activities and an overarching wellness-based culture. Perhaps most flexible of those discussed is vacation as it allows opportunities for involvement in other leisure activities, with some travelers making an effort to plan trips with specific activities in mind. This overlap is not limited to vacation activities. Mindful and physical activities can also offer a combination of benefits based on situational factors. Due to this overlap, it is possible for individuals to experience a range of mental, physical, and social benefits from any activity they engage in.

When considering the potential benefits associated with leisure activities, it is sensible to engage in multiple activities, especially if one can take part in several at once. This includes active (e.g., playing soccer) and passive activities (e.g., reading a book), which are both necessary for recovery (Cunningham, 2019). The compounding positive effects of involvement in multiple activities has certainly been alluded to and is supported throughout published literature (e.g., de Bloom et al., 2011). Specifically, de Bloom et al. (2011) observed employees who spent more time engaged in physical activities during vacation experienced greater positive effects on their health and well-being, than those who did not. While potential benefits are abundant, these effects are contingent upon an awareness of the potentially stress-inducing outcomes related to mismanagement of funds or over-involvement that may be associated with leisure activities (Knecht et al., 2016).

### **Current Study**

In the current study we aim to obtain a greater understanding of how participation in specific leisure activities relating to the three domains of health, namely, mental, physical, and social (“Constitution of the World Health Organization,” 2006), influence worker characteristics. Specifically, the potential moderating influences of mindfulness, physical activity, and vacation

on the relationships between workaholism and work stress will be explored. In this study, potential correlations existing among work stress, workaholism, and work engagement will be also assessed. A combined exploration into the influence of worker characteristics and health-driven leisure activities will provide insight for encouraging worker participation in activities focused on well-being (e.g., leisure activities). With an apparent gap in the existing literature, it is important to evaluate how leisure activities that are explicitly related to known health domains, can influence worker characteristics. In addition to obtaining a greater understanding of these points, we hope to explore the health- and productivity-related implications leisure activities may provide.

The following questions and hypotheses consider how facets of leisure influence, and are influenced by, work-related characteristics. This study will contribute to the growing field of research on employee health and provide information that can be used by organizations to develop effective employee well-being plans. With increasing concerns regarding employee well-being, the value of this research has the potential to be great. Not only can these findings be used to address existing disparities between employee values and organizational offerings (Agarwal et al., 2018), but they can provide opportunities to address concerns for workers of all ages. As Paggi, Jopp, and Hertzog (2016) explained, appropriate and accessible leisure activities may positively influence well-being for adults of all ages. Similarly, people value different resources, which can be used to manage work-related demands and may be obtained through different forms of leisure activities (Cunningham, 2019).

Leka and Cox (2008) identified three best practices to consider when developing intervention and well-being programs; these are content, context, and evaluation. In the current study, potential influences of select leisure activities on worker characteristics are discussed,



which may serve as content for well-being and work-life balance programs. Further, these questions help to identify the relationships between our six factors of interest and may be used to provide context to organizational members interested in developing, supporting, or using components of well-being programs. By understanding how leisure activities may influence worker characteristics and related worker outcomes (e.g., productivity), organizations will have clearer direction when evaluating the effectiveness of work-life balance programs. To develop and support effective well-being programs, it is important to first understand the worker characteristics of interest. Thus, the first of four questions considers the basic relationships between workaholism, engagement, and work stress.

**Question 1.** How do the three worker characteristics (i.e., workaholism, work engagement, and work stress) relate to one another?

Many models explain the underlying factors that contribute to work stress. One such theory is the job demands-control model which posits individuals are better able to manage job-related demands when allotted greater control over their work-related activities and contributions (Ganster & Perrewé, 2011). Because work stress occurs when demands are high, but control is low, it is possible for workaholics to experience greater work stress, compared to their non-workaholic counterparts. While workaholics may be in positions that allow for more individual control of one's work, the overwhelming urge that drives workaholics to work may signify a lack of personal control.

The effort-reward imbalance (ERI) model further explains a positive relationship between work stress and workaholism. Similar to the job demands-control model, the ERI model identifies a lack of balance between two factors: one personal and the other situational, as well as a positive link between self-management and health (Siegrist, 2001). Namely, individuals who

are compulsive or overly dedicated to their work (e.g., workaholics) are likely to receive rewards that are not comparable to the amount of effort dedicated to a task. This inconsistency results in higher stress, in addition to greater risks of experiencing negative health outcomes. Recent studies have used these and other models as the basis for exploring the relationship between workaholism and work stress.

For example, researchers including Spence and Robbins (1992), Burke (2000), and more recently, Aziz and Zickar (2006) and Clark et al. (2016), found workaholics reported greater stress and lesser physical and emotional well-being, as compared to other employees. In their meta-analysis, Clark et al. (2016) found a positive correlation between workaholism and work stress ( $\rho = .55$ ), which can be explained by the JD-R model. This suggests the availability of resources (e.g., supervisory support) can offset the mentally, physically, and emotionally taxing components of one's job. Building upon this work and further supporting the influence of the JD-R model, Balducci, Avanzi, and Fraccaroli (2018) found that when measured at two separate times, workaholism had a significant, positive correlation with job demands and mental distress (a noted form of stress). Lichtenstein, Malkenes, Sibbersen, and Hinze (2019) recently added to the existing literature by identifying a clear, positive relationship between workaholism and work stress. Hence, the following hypothesis is proposed:

***Hypothesis 1 (Q1:H1).*** Workaholism will be positively related to work stress.

Van Beek et al. (2012a) proposed workaholics and engaged workers are both hard-workers. Despite work engagement and workaholism being termed the “good” and “bad” forms of heavy work investment, respectively, the relationships existing between these constructs and indicators of well-being are varied. While workaholism is negatively related to well-being and work performance, work engagement has a positive relationship with each of these factors

(Shimazu & Schaufeli, 2009). To further differentiate workaholism and work engagement, van Beek et al. (2012b) proposed a prevention versus promotion focused model. They observed workaholics were more driven by a prevention focus, while engaged workers were more focused on promotion. Prevention can best be understood as a desire to avoid negative stimuli, while promotion is based on a desire to experience positive outcomes. Workaholics may operate under a prevention focus to avoid negative internalized feelings, while engaged workers are more likely to work for the pure joy they receive from their jobs. This also references the job demands-control model by noting engaged workers work by choice, while workaholics cannot control their urge to work (Ganster & Perrewé, 2011). Thus, the following hypothesis is proposed:

***Hypothesis 2 (Q1:H2).*** Work engagement will be negatively related to workaholism.

Research by Burke (2000) indicated the existence of a negative relationship between work engagement and perceived work stress, a sentiment echoed by others such as Andreassen, Ursin, and Eriksen (2007) and Byrne and colleagues (2016). Underlying this assessment is the JD-R model, which notes demands are related to negative worker outcomes (e.g., stress, reduced health), while resources are related to positive worker outcomes (e.g., work engagement, well-being; Bakker & Demerouti, 2007). Specifically, job resources can be intrinsically and/or extrinsically motivating and inspire employees to achieve work-related goals. When employees are provided with necessary resources, they can better cope with job demands and engage in work-related activities. This is especially true of situations in which job demands are high. Without resources to draw on, an employee is more likely to experience work stress (Bakker & Demerouti, 2007). Bakker et al. (2008) further explained the relationship between work engagement and stress in the following terms—rather than feeling overwhelmed, engaged workers see difficult tasks as challenges, suggesting they are less likely to feel stressed by their

work. Therefore, the following hypothesis is proposed:

***Hypothesis 3 (Q1:H3).*** Work engagement will be negatively related to work stress.

It is important to expand upon the general links that exist between workaholism, engagement, and stress. The second question will explore how each of these worker characteristics relate to overall participation in leisure activities.

**Question 2.** How are each of the worker characteristics related to participation in leisure activities?

Newman et al.'s (2014) DRAMMA model theorizes leisure activities provide the greatest benefits when aligned with one of five mechanisms. Of the five presented mechanisms, the detachment-recovery component seems most important to ensuring individuals experience the greatest benefits of leisure activities. This requires employees to disengage from work in order to recover and may be problematic for some individuals, especially workaholics, who obsess over their work.

While there are benefits to leisure activities for most employees, there are additional considerations for compulsive workers. One such concern is overinvolvement in leisure activities has the potential to increase work-life conflict, an issue that may already exist. This idea is further supported by Meijman and Mulder's (1998) ER model emphasizing the influence of effort on recovery outcomes. That is, by putting effort into work-related tasks, employees may be exposing themselves to greater stress. By removing themselves from stressful situations, employees can invest more effort into leisure activities, which have the potential to increase resources (i.e., energy) that can be reinvested into the work environment. The Conservation of Resources (COR) theory, which posits stress has a negative relationship with individual resources (Hobfoll, 1989), explains this further. Unfortunately, though workaholics may

experience the greatest benefits from leisure activities (e.g., taking a vacation), they also stand the most to lose and could experience a detriment to overall health and well-being or even relapse into a workaholic state upon return to the workplace (de Bloom et al., 2014).

As previously noted, workaholics are characterized by compulsions that drive an excessive focus on work-related activities (Mazzetti et al., 2018). Aziz and Zickar (2006) explored the relationship between workaholism and work-life balance. When compared to unengaged workers, workaholics' self-reports and appraisals by acquaintances both suggested they experience greater work-life imbalance. Clark et al.'s (2016) research identified a negative relationship between workaholism and leisure activities, specifically noting workaholics were unlikely to participate in regular or effortful non-work activities. Similarly, during the development of the Workaholism Analysis Questionnaire (WAQ), Aziz, Uhrich, Wuensch, and Swords (2013) emphasized lack of work-life balance for workaholics. Further, individuals with workaholic tendencies may be most interested in working for companies that value and reward hard work (van Wijhe-van Iperen et al., 2010). This is sensible, as time cannot simultaneously be devoted to work and leisure. Hence, the following hypothesis is proposed:

***Hypothesis 1 (Q2:H1).*** Workaholism will be negatively related to participation in leisure activities.

Stress reduction has been noted as a key benefit of participation in leisure activities (Fisher et al., 2017). Along with relieving stress, activities like exercise did not further contribute to existing stress levels (Gerber & Pühse, 2009), while yoga contributed to positive physical and mental health outcomes (Gura, 2002). In addition to physically and mentally driven activities, individuals in different industries noted significant, negative relationships between social support and work stress (McCalister, Dolbier, Webster, Mallon, & Steinhardt, 2006). While these

supporters were supervisors and co-workers, perhaps this finding extends to social support outside of the workplace.

Based on Meijman and Mulder's (1998) ER model, there is concern that perhaps the leisure activities themselves could contribute to perceived stress levels (Knecht et al., 2016; Shearer et al., 2016). For example, making the effort to participate in activities may contribute to individual stress. Provided workers can overcome this issue, Simmons (2000) asserts eustress, or a positive stress response, is real and by pushing oneself to participate in leisure activities, an individual may experience less distress (negative responses to stress; as cited in Nelson & Simmons, 2011). Accordingly, the following hypothesis is proposed:

***Hypothesis 2 (Q2:H2).*** Work stress will be negatively related to participation in leisure activities.

Greenhaus and Allen (2011) proposed a model of work-life balance whereby effectiveness in work and life domains are influenced by the relative levels of enrichment and interference provided by work and life involvement. Simply put, work-life balance is conceptualized in many ways, including involvement, effectiveness, and satisfaction across most or all areas of one's life (Greenhaus & Allen, 2011). Research by Marks and MacDermid (1996) and others (e.g., Grzywacz & Carlson, 2007) have explained in order to have a healthy work-life balance, employees need to be fully engaged, productive, and happy in each of their roles.

Sonnentag (2003) suggests the time spent engaged in extracurricular activities boosts work engagement. This sentiment was supported by ten Brummelhuis and Bakker (2012) who found a positive correlation between leisure activities (i.e., social, low-effort, and physical) and work engagement during the following day. This notion is supported by the JD-R model, which posits attainment of resources, like those obtained through leisure participation, can help workers

manage and overcome the demands of work-related tasks (Bakker & Demerouti, 2007). This evaluation emphasizes the necessity of participation in leisure activities to be best engaged at work and should be championed by supervisors and organizations. Therefore, the following hypothesis is proposed:

***Hypothesis 3 (Q2:H3).*** Work engagement will be positively related to participation in leisure activities.

Van Wijhe-van Iperen et al. (2010) expanded upon previous understandings and treatment of workaholism by discussing how interventions can be selected and implemented to be most effective. That is, interventions are most useful in combatting workaholic tendencies when positive behaviors are reinforced, and environmental factors are considered. In their research, potential behavioral and cognitive interventions are discussed, specifically the theory that participation in leisure activities would reduce workaholic tendencies. This is supported by definitions of leisure and workaholism which identify a mismatch between work and leisure time (van Wijhe-van Iperen et al., 2010).

The third question considers how leisure activities representing the three health domains (i.e., mindfulness represents mental health, physical activity represents physical health, vacation represents social health) may moderate the relationship between workaholism and work stress. Several theories, including the job demands-control and JD-R models, can explain the potential moderating influence of resources, such as those obtained through participation in leisure activities. Namely, resources may be mental, physical, or social in nature and have a positive influence related to goal achievement, reduced perception of demands, and development of personal and professional skills (Bakker & Demerouti, 2007). Provided the resources span the three health domains and have positive influences on workers, the JD-R model can appropriately

explain the relationships between leisure activities, workaholism, and work stress.

Further, the JD-R model suggests situations involving limited resources along with high work demands, increase feelings of distress (Bakker & Demerouti, 2007; Clark et al., 2016). Workaholics tend to have limited resources to draw from and limited control over their work (Ganster & Perrewé, 2011), increasing their potential to experience stress. The addition of leisure activities to a workaholic's life can provide resources that can buffer the relationship between workaholism and work stress. The health-driven nature of mindfulness, physical activity, and vacation suggest each of these activities provides some positive outcome to employees, especially those who lack demand-reward balance (e.g., work-life balance—work could provide demands, while life could provide rewards). Drawing on these theories, the following question and hypotheses are considered:

**Question 3.** How will participation in leisure activities aligned with each domain of health moderate the relationship between workaholism and work stress?

Insignificant differences in initial stress responses were noted by individuals practicing mindfulness, compared to their non-mindful counterparts (Wolever et al., 2012). That said, the accessibility of practices and long-term benefits to stress reduction were acknowledged (Shearer et al., 2016). A select group of workaholics partook in Meditation Awareness Training for 8-weeks, involving participation in various forms of mindfulness. At the conclusion of training, participants showed significant decreases in workaholism and work stress, compared to individuals not receiving training, and continued to experience these benefits three months later (van Gordon et al., 2007). Strategic interventions, especially those including mindfulness, are useful in reducing the influence of workaholic tendencies. Drawing from the JD-R model, Fredrickson, Cohn, Coffey, Pek, and Finkel (2008) theorized mindfulness could reduce stress



and better manage one's overall work-life situation. Likewise, mentally-driven activities have the potential to provide resources that workers can use to offset work-related demands (Bakker & Demerouti, 2007). Accordingly, the following hypothesis is proposed:

***Hypothesis 1 (Q3:H1).*** Participation in mindfulness will moderate the relationship between workaholism and work stress, such that as engagement in mindfulness increases, the relationship between workaholism and work stress will weaken.

In addition to the potential for physically-driven activities to provide resources to workers (Bakker & Demerouti, 2007), multiple researchers have noted the potential stress-reducing effects of exercise (e.g., Burg et al., 2017). Aziz et al. (2015) suggested the moderating influence of exercise when evaluating the relationship between stress-related illness and workaholism. Prior to these studies, Burke (2000) identified a negative relationship between workaholism and physical well-being, but a positive relationship between workaholism and job stress. Appropriately designed interventions are theorized to reduce workaholic tendencies and, in turn, stress. Specifically, exercise has the potential to provide positive outcomes (e.g., lower blood pressure; Aziz et al., 2015), which could be seen as reinforcement for engaging in positive activities (van Wijhe-van Iperen et al., 2010). Based on these findings and the suggestions of demand-related theories delineated earlier, it is possible exercise could improve physical well-being, thus moderating the workaholism-work stress relationship (Aziz et al., 2015). Hence, the following hypothesis is proposed:

***Hypothesis 2 (Q3:H2).*** Participation in physical activity will moderate the relationship between workaholism and work stress, such that as participation in physical activity increases, the relationship between workaholism and work stress will weaken.

Employees may feel relief from vacation, regardless of how satisfying the experience

may be (Westman & Eden, 1997). While two sources of social support (i.e., supervisors and co-workers) may not be attendees of an employee's typical vacation, their overall backing was shown to have a negative relationship with work stress (McCalister et al., 2006). It is possible external social support systems, like those maintained and developed through vacation experiences (e.g., family, friends, strangers), may negatively influence perceptions of work stress. This is supported by the JD-R model, which cites resources, such as social support, can reduce the strength of the relationship between workaholism and work-related stress (Bakker & Demerouti, 2007; Clark et al., 2016). Therefore, the following hypothesis is proposed:

***Hypothesis 3 (Q3:H3).*** Participation in vacation time will moderate the relationship between workaholism and work stress, such that as engagement in vacation time increases, the relationship between workaholism and work stress will weaken.

As Voss (1967) explained, leisure activities are a broad category including activities that involve voluntary participation without feelings of obligation. Some researchers have suggested the potentially compounding influences of participation in leisure activities. For example, de Bloom et al. (2011) observed employees who spent more time engaged in physical activities during vacation experienced greater positive effects on their health and well-being, than those who did not. Hence, the following hypothesis is proposed:

***Hypothesis 4 (Q3:H4).*** Overall participation in leisure activities will moderate the relationship between workaholism and work stress, such that as engagement in leisure activities increases, the relationship between workaholism and work stress will weaken.

From a practical perspective, the type of leisure activity one engages in is unlikely to be the sole factor influencing the relationship between workaholism and work stress. Voss (1967) identified leisure activities as those a person participates in without feeling pressured or bound to

do so. As workaholics have a compulsive desire to work, perhaps time could be an important deciding factor related to leisure participation. Knecht et al. (2016) have shown time pressure to increase work-life-family tensions, which in turn can contribute to feelings of stress. Here, the term *time pressure* refers to the negative feelings associated with having one or more goals that cannot realistically be achieved within the given constraints. Specifically, this study involved the outcomes arising when one of these conflicting activities is work-related and the other is related to leisure. Thus, the following question is considered:

**Question 4.** How will the perception of time pressure related to leisure participation influence the relationship between workaholism and work stress?

Newman et al.'s (2014) DRAMMA model suggests five mechanisms influence the ability of leisure activities to provide one with a range of benefits. Perhaps most relevant, the detachment-recovery mechanism suggests that by separating work from leisurely activities, one can experience the greatest benefits, such as relaxation (Etzion et al., 1998). Thus, it is theorized that individuals allowing work-related matters to encroach upon leisure time are less likely to experience the recovery effects and may feel more stressed. As leisure activities have the potential to reduce one's available work time, the following hypothesis is proposed:

***Hypothesis 1 (Q4:H1).*** Time pressure will strengthen the relationship between workaholism and work stress, such that as perceptions of time pressure linked to leisure participation increases, the relation between workaholism and work stress will strengthen.

## CHAPTER II: METHOD

### Participants

Participants were 350 full-time (i.e., work at least 40 hours per week) and US-based employees who were at least 18 years old. They ranged in age from 21 to 77 years old ( $M = 39.97$ ,  $SD = 10.53$ ). The majority of respondents (63%) identified as female. In terms of race/ethnicity, 83% indicated being Caucasian/White, 7% as African American/Black, 5% as Asian/Pacific Islander, and 4% as Hispanic/Latino. Many participants were married or in a domestic partnership (51%), or reported being single and never married (32%). Additionally, 56% indicated they had children, with 71% of those individuals having one or two children. In addition to work and leisure-related roles, 17% noted having non-parental roles outside of work. In terms of highest level of completed education, 43% stated a bachelor's degree, 18% indicated a master's degree, and 20% reported a high school diploma or equivalent. Other degrees earned included doctorate (2%), professional (2%), and associate degrees (15%).

Respondents worked in various fields, with the most common industries being education or training (16%), health science (10%), finance (9%), manufacturing (7%), and informational technology roles (7%). They worked for their current organization for an average of 7.61 years, with 7% being there for less than one year and another 7% for one year. Additionally, they were in their current role for an average of 7.34 years, with 5% holding it for less than one year and 4% for 20 or more years. Of participants, 20% were in entry-level positions, 65% in mid or intermediate level roles, and 15% held senior level roles. Sixty percent of respondents reported earning less than \$60,000 per year. Of all individuals, 5% earned less than \$20,000 per year, while 2% reported making \$100,000 or more annually.

On average, participants worked 45.18 hours per week ( $SD = 6.96$ ), with 2% working 70

or more hours weekly. Furthermore, the average employee worked 23.6 hours from home ( $SD = 9.04$ ). Two reasons were frequently cited for engaging in overtime work—43% said they needed the overtime pay and 44% said there was pressure to complete projects before set deadlines. Less commonly, employees cited their employer would be more likely to promote or pay them more if they worked extra hours (7%), or that they worked extra hours for enjoyment (6%). Just over 73% of respondents participated in fewer than 20 hours of leisure activity per week.

## **Procedure**

Upon obtaining approval from the Institutional Review Board (IRB; see Appendix), a survey or Human Intelligence Task (HIT) compiled in Qualtrics was offered to members of Amazon's Mechanical Turk (MTurk) community. MTurk is a survey platform with a network of demographically and geographically diverse individuals. Participants self-select HITs from a list of options for which they meet the minimum criteria. These criteria are determined by survey requestors (i.e., researchers) who apply filters of choice. For this survey, the following filters were selected: US-based participants, completion of at least 100 HITs, minimum HIT approval rating of at least 95%, and full-time workers (i.e., 35 hours or more, per MTurk specifications). The Fair Labor Standards Act (FLSA) requires employers pay one-and-a-half times an employee's standard rate for any time worked over 40 hours in a week (U.S. Department of Labor, n.d.). As this upper limit is a common standard for full-time employment in the United States, employees were required to work for a minimum of 40 hours per week and were further filtered in SPSS.

Participants who completed the survey and met screen-out qualifications were compensated with a small monetary reward (i.e., \$0.20), distributed through MTurk's system. Individuals were provided an informed consent document, explaining completion of the survey

was voluntary, and asserting confidentiality and anonymity of all respondents. After acknowledging and accepting the informed consent document, participants answered items related to leisure activities and worker characteristics, as well as demographics. The survey took 10-15 minutes to complete.

## **Measures**

**Workaholism.** The 29-item Workaholism Analysis Questionnaire (WAQ; Aziz et al., 2013) was used to measure workaholism unidimensionally. It is scored on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher values indicating greater levels of workaholic tendencies. A sample item is, “I feel stressed out when dealing with work issues.” A Cronbach’s alpha of .92 was noted in the current study.

**Work stress.** The 8-item Stress in General–Revised Scale (SIG-R; Yankelovich, Broadfoot, Gillespie, Gillespie, & Guidroz, 2012) was used to assess general work stress. The SIG-R is scored on a three-point scale (“Yes,” “No,” or “*Cannot Decide*”), whereby higher scores reflect more work stress. Aside from item 3, which is reverse-coded, all items are scored 3, 0, and 1.5, respectively. A sample item from the SIG-R is, “demanding.” The internal consistency of this measure was .82.

**Work engagement.** Seppälä et al. (2009) identified the 9-item Utrecht Work Engagement Scale (UWES-9) as a valid measure of work engagement. The UWES-9 explores the three factors of work engagement (i.e., vigor, dedication, and absorption) using a 7-point scale ranging from 0 (*never*) to 6 (*every day*; Schaufeli & Bakker, 2004), with higher scores indicating greater levels of work engagement. A sample item is, “When I get up in the morning, I feel like going to work.” In this study, a Cronbach’s alpha of .94 was observed.

**Mindfulness activities.** A 2-item measure exploring the main reason for participating in

specific mindfulness-based activities was developed for this study. A sample item is, “About how many hours during a typical week in the last month did you engage in these mindfulness-based activities?” A complete list of items can be found in Appendix B.

**Physical activities.** A 2-item measure probing the main reason for participating in specific physical activities was developed for this study. A sample item is, “About how many hours during a typical week in the last month did you engage in these physical activities?” The full measure can be found in Appendix B.

**Vacation activities.** A 5-item measure was developed to assess the frequency with which participants took vacation in the last year, as well as how long these vacations typically lasted for, and the main reason for taking a vacation. A sample item is, “On your most recent vacation, about how many hours during a typical day did you engage in leisure activities?” A list of all developed items can be seen in Appendix B.

**Composite leisure participation.** Two additional 3-item measures were created to assess both the number of hours and percentage of time an individual participates in each of the three main leisure activities (i.e., mindfulness, physical activity, and vacation). A sample item is, “About how many hours during a typical week in the last month did you engage in mindfulness-based activities?” All items may be seen in Appendix B.

**Time pressure.** A 3-item measure considered individual perceptions of time pressure experienced after participating in each of the three leisure activities. A sample item is, “How often after participating in mindfulness-based activities do you feel that you do *not* have enough time to work, but would have, had you *not* participated in these activities?” All items are listed in Appendix B.

## **Data Analysis**

Sex, age, race/ethnicity, and other demographic information were collected from participants in order to describe the sample. Work-related characteristics, such as number of hours worked, industry type, and organizational tenure, were also collected for descriptive purposes. The statistical software, SPSS, was used to clean and analyze the data. For each of the three worker characteristics (i.e., workaholism, work stress, and work engagement), means, standard deviations, and correlations were obtained. These correlations were then used to answer the first question. The frequency of participation in each leisure activity (i.e., mindfulness, physical activity, and vacation) was calculated by standardizing the participation rate and time values (i.e., per day; see Appendix B) for the respective activities. Then, a composite score, representing overall leisure participation, was created by averaging the individual activities' frequency scores. These measures of participation were purely frequency-based and individual reasons for participation or the specific activities in question were not considered. The composite scores were correlated with each of the worker characteristics to answer the second question. Reliability analyses were also obtained to assess internal consistency for the workaholism, work stress, work engagement, and time pressure scales.

A multiple regression analysis was used to test the potential moderating influence of three types of leisure activities (i.e., mindfulness, physical activity, and vacation) on the relationship between workaholism and work stress, such that the addition of leisure activities will weaken the relationship (Q3:H1-H4). For this model, workaholism served as the predictor and work stress was the criterion. A .05 criterion of statistical significance was used. Main effects for each leisure activity and workaholism relative to work stress were examined independent from one another. Next, the interactions between each leisure activity and workaholism (i.e.,



mindfulness X workaholism, physical activity X workaholism, vacation X workaholism, and overall leisure participation X workaholism) were assessed. A multiple regression analysis was also used to assess the potential moderating influence of time pressure on the relationship between workaholism and work stress, such that as perceptions of time pressure increase, the relationship between workaholism and work stress will strengthen.

## **CHAPTER III: RESULTS**

### **Data Screening**

MTurk was used to recruit US-based participants. Individuals were given a brief explanation of the study and link to follow, if interested in participating. The survey was hosted on Qualtrics, an experience management platform. Once data collection was complete, SPSS was used to clean and analyze the data set, which initially consisted of 578 respondents.

Select cases were deleted from the dataset. Three respondents did not provide informed consent and were deleted. Two hundred and six individuals indicated they worked less than 40 hours per week (U.S. Department of Labor, n.d.), or did not respond to this item, and were excluded from the dataset. An additional two participants were omitted, as they indicated spending the majority of their adult working lives in countries other than the United States. All remaining participants met the minimum requirements (e.g., US-based, work at least 40 hours per week, at least 18-years-old) to be included in the sample. Following data cleaning, 367 usable cases remained.

The work stress measure included one reverse-worded item (i.e., “Calm”). For practical purposes, the other seven SIG-R items were not reverse-coded, so that higher scale scores were indicative of greater work stress. Afterward, all scale scores were calculated. Cases in which fewer than 90% of scale questions were answered were noted as missing and were not included in scale calculations. Overall person mean scale scores were calculated by averaging each individual’s score within each scale. The resulting values were imputed in place of missing values for cases that met the 10% threshold for missing data (Wuensch, 2020). Based on listwise deletion of cases falling short of the 10% threshold, 350 cases were considered in all analyses. Scores for each of the worker characteristics (i.e., workaholism, work engagement, and work

stress), individual leisure activities (i.e., mindfulness, physical activity, and vacation), composite leisure measure, and time pressure were then standardized. As the scores for mindfulness and physical activity were positively skewed, these variables were transformed to ranks prior to conducting moderation analyses.

G\*Power 3.1.9.2 was used to calculate the model's statistical power. Based upon Cohen's (1988) criteria, the study's effect size was small to medium ( $|\rho| = .2$ ). With  $N = 350$  and  $\alpha = .05$ , a two-tailed, post hoc analysis indicated power = .968. Lowry's (n.d.) confidence interval calculator was employed to identify 95% confidence intervals, where needed.

To assess the construct validity of each leisure activity measure (i.e., mindfulness, physical activity, and vacation) relative to the three outlined health domains (i.e., mental, physical, and social), three questions were asked to assess the motives underlying engagement in each type of activity (e.g., mental health, physical health, social health). Responses to these questions indicated each activity has the potential to influence multiple, overlapping health domains. As seen in Table 1, some of the leisure/health-type associations originally presented were supported (i.e., mindfulness represents mental health and physical activity represents physical health). Although participation in vacation was not primarily driven by social motives, like mindfulness and physical activity, it was largely motivated by mental health and relaxation.

<b>Table 1.</b> <i>Main Purposes for Participating in Leisure Activities.</i>	
Activity Type	<i>N</i> (%)
Mindfulness-Based Practices	
Mental/emotional health, relaxation	237 (68.9)
Physical health	55 (16.0)
Physical Activities	
Physical health/appearance	164 (46.9)
Mental/emotional health, relaxation	154 (44.0)
Vacation	
Mental/emotional health, relaxation	215 (61.8)
Socialization	78 (22.4)
<b>Note:</b> <i>N</i> = 350.	

## Descriptive Statistics and Correlations

Table 2 includes zero-order correlations, descriptive statistics (i.e., means, standard deviations, and ranges), and Cronbach's alphas for select demographic items and the main study variables. The WAQ, SIG-R, UWES-9, and measure of time pressure each exceeded the minimum recommended Cronbach's alpha value (.70; Nunnally & Bernstein, 1994). Of note, mean values of workaholism and work engagement were moderate, while average levels of work stress were high. Additionally, mean values were not provided for gender or education level, as these are categorical variables. It should be also be noted that each leisure participation measure (i.e., physical activity, mindfulness, vacation, and composite measure) was assessed using standardized scales, so all means are near-zero.

**Table 2***Descriptive Statistics and Intercorrelations*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. WAQ	(.921)												
2. SIG-R	.414**	(.820)											
3. UWES-9	-.039	-.222**	(.934)										
4. Age	-.099	-.045	.115*	-									
5. Gender	-.149**	.018	-.004	-.008	-								
6. Education	.041	.031	-.007	.024	.026	-							
7. PA	-.026	-.140**	.036	.005	-.088	-.040	-						
8. MB	.050	-.076	.174**	.048	.000	-.141**	.488**	-					
9. Vac	-.203**	-.122*	-.031	.143**	.058	.037	.167**	.026	-				
10. CLM	-.155**	-.162**	.042	.129*	.023	-.027	.537**	.438**	.877**	-			
11. TP	.444**	.246**	.034	-.107*	-.056	-.050	.021	.164**	-.151**	-.061	-		
12. HPW	.298**	.216**	.050	.058	-.149**	.084	-.080	-.009	-.051	-.079	.149**	-	
13. HFH	.069	-.054	.080	.084	.033	-.080	.097	.125*	-.008	.050	.091	.284**	-
Range	1.00-4.46	1.50-3.00	1.00-7.00	21.00-77.00	-	-	.96-4.17	-.71-5.33	-1.29-2.45	-1.49-2.66	1.00-5.00	40.00-70.00+	20.00-70.00
Mean	2.488	2.379	4.422	39.974	-	-	.0017	.0022	.0006	-.0001	2.046	45.177	23.50
SD	0.684	0.374	1.175	10.529	-	-	.804	.819	.855	.829	1.064	6.957	9.03

Note.  $N = 350$ . Entries on the main diagonal are Cronbach's alphas. WAQ = Workaholism Analysis Questionnaire; SIG-R = Stress in General - Revised; UWES-9 = 9-item Utrecht Work Engagement Scale; MB = Composite measure of mindfulness practices; PA = Composite measure of physical activity; Vac = Composite measure of vacation time spent on leisurely activities; CLM = Composite measure of leisure participation; TP = Time pressure; HPW = Hours worked per week; HFH = Hours worked from home. Male coded with "1" and female coded with "2." Means for PA, MB, Vac, and CLM are based on standardized values.

\* $p < .05$ , \*\* $p < .01$

Correlations between the four main study variables and demographic items were explored. Men scored significantly higher ( $M = 2.620$ ,  $SD = .717$ ,  $n = 131$ ) on the WAQ than did women ( $M = 2.409$ ,  $SD = .653$ ,  $n = 219$ ),  $r_{pb} = -.149$ ,  $p < .01$ ,  $t(363) = 2.803$ ,  $p < .01$ . Men also reported working significantly more hours per week ( $M = 46.519$ ,  $SD = 7.361$ ,  $n = 131$ ) than did women ( $M = 44.374$ ,  $SD = 6.591$ ,  $n = 219$ ),  $r_{pb} = -.149$ ,  $p < .01$ ,  $t(363) = 2.962$ ,  $p < .01$ .

Perceived time pressure was positively correlated with individuals' scores on the WAQ ( $M = 2.488$ ,  $SD = .684$ ,  $n = 350$ ),  $r_{pb} = .444$ ,  $p < .01$ , and the SIG-R ( $M = 2.379$ ,  $SD = .374$ ,  $n = 350$ ),  $r_{pb} = .246$ ,  $p < .01$ . Likewise, total hours worked per week was positively correlated with scores on both the WAQ ( $M = 2.488$ ,  $SD = .684$ ,  $n = 350$ ),  $r_{pb} = .298$ ,  $p < .01$ , and the SIG-R ( $M = 2.379$ ,  $SD = .374$ ,  $n = 350$ ),  $r_{pb} = .216$ ,  $p < .01$ . Age had a positive correlation with work engagement,  $r_{pb} = .115$ ,  $p = .032$ , with older workers being more engaged in their work than younger workers. Age was also positively correlated with the number of hours spent participating in leisurely activities during a typical vacation day,  $r_{pb} = .132$ ,  $p = .014$ , as well as the number of hours typically spent on all leisure activities (i.e., mindfulness, physical activity, and leisurely vacation activities),  $r_{pb} = .129$ ,  $p = .016$ . Younger workers were also more likely to report a sense of time pressure related to leisure activities,  $r_{pb} = -.106$ ,  $p = .047$ , than were older employees. As is typically expected, age had a positive correlation with number of years at one's current organization,  $r_{pb} = .435$ ,  $p < .01$ .

Additional analyses revealed individuals who reported not having children ( $M = 2.574$ ,  $SD = .653$ ,  $N = 154$ ) scored more highly on the WAQ than did their childbearing counterparts ( $M = 2.421$ ,  $SD = .702$ ,  $N = 196$ ),  $r_{pb} = .111$ ,  $p = .038$ . Reports of not having children were also related to lower scores on the UWES-9 ( $M = 4.271$ ,  $SD = 1.272$ ,  $N = 154$ ),  $r_{pb} = -.114$ ,  $p = .033$ , than scores for those with children ( $M = 4.541$ ,  $SD = 1.082$ ,  $N = 196$ ).

Frequencies related to leisure participation (i.e., type and frequency of activities) were also established. Table 3 provides an overview of the different mindfulness and physical activities respondents engaged in, as well as the number of vacations taken in the past year. When asked which of several leisure activities (see Appendix B) individuals participated in, “informal practices” and mindfulness meditation were most commonly practiced. Similarly, respondents reported participating in a variety of physical activities, with most participating in housework and exercise. Interestingly, only four respondents (1.1%) indicated they do not engage in any sort of physical activity. As vacation activities span numerous categories and locations, vacation type was not assessed. However, frequency of vacation periods was reported. In the twelve months prior to survey participation, 35.1% of respondents reported taking one vacation, while 24.3% reported taking two. Alternatively, 18.9% of participants did not take a vacation within the past calendar year.

<b>Table 3.</b>	
<b>Types of Leisure Activities Reported.</b>	
Activity Type	<i>N</i> (%)
Mindfulness-Based Practices	
“Informal” practice	207 (59.1)
Mindfulness meditation	119 (34.0)
Yoga	74 (21.1)
Physical Activities	
Housework	265 (75.7)
Exercise	235 (66.6)
Yardwork	155 (44.3)
None	4 (1.1)
# of Vacations in Past Year	
2	85 (24.3)
1	123 (35.1)
0	66 (18.9)
<b>Note:</b> <i>N</i> = 350.	

## Tests of Hypotheses

In the current study, four overarching questions were explored. Per Question 1, Hypotheses 1-2, the relationships between workaholism and work stress, as well as work engagement and work stress, were as predicted. Workaholism was positively correlated with work stress,  $r = .414, p < .01, 95\% \text{ CI } [.324, .497]$  (Q1:H1), and work engagement was negatively related to it,  $r = -.222, p < .01, 95\% \text{ CI } [-.319, -.120]$  (Q1:H3). However, work engagement had a weak, nonsignificant, negative relationship with workaholism,  $r = -.039, p = .465, 95\% \text{ CI } [-.143, .066]$ , thus Q1:H2 was not supported.

The results also aligned with two the predictions outlined by Question 2, Hypotheses 1-3. As expected, workaholism had a negative relationship with leisure participation,  $r_{pb} = -.155, p = .004, 95\% \text{ CI } [-.255, -.051]$  (Q2:H1), as did work stress,  $r_{pb} = -.162, p = .002, 95\% \text{ CI } [-.262, -.059]$  (Q2:H2). However, the hypothesized relationship between work engagement and overall leisure participation (Q2:H3) was not supported,  $r_{pb} = .042, p = .438, 95\% \text{ CI } [-.063, .146]$ .

Question 3 involved four hypotheses, one (i.e., Q3:H3) of which was supported by the data. Each of the leisure activities (i.e., mindfulness, leisurely physical activities, and pleasurable vacation activities) and a composite measure of leisure participation were tested as potential moderators of the relationship between workaholism and work stress. The potential moderating influence of each of the aforementioned variables were tested using a backwards sequential moderation analysis. The four variables were each combined with the WAQ to create interaction terms (e.g., WAQ x MB). All three leisure activity interaction terms, leisure activity variables, and the WAQ term were added to a model. In this model, the WAQ x MB ( $p = .826$ ), WAQ x PA ( $p = .780$ ), WAQ x Vac ( $p = .722$ ), and WAQ x CLM ( $p = .845$ ) all fell short of significance. The composite leisure and WAQ x CLM terms were dropped from the model. The WAQ x MB



( $p = .623$ ), WAQ x PA ( $p = .863$ ), WAQ x Vac ( $p = .086$ ) interactions all fell short of significance. Upon dropping the composite measure of physical activity and related interaction term from the model, WAQ x MB ( $p = .601$ ) and WAQ x Vac ( $p = .091$ ) still fell short of significance. Lastly, mindfulness and the associated interaction term were dropped from the model.

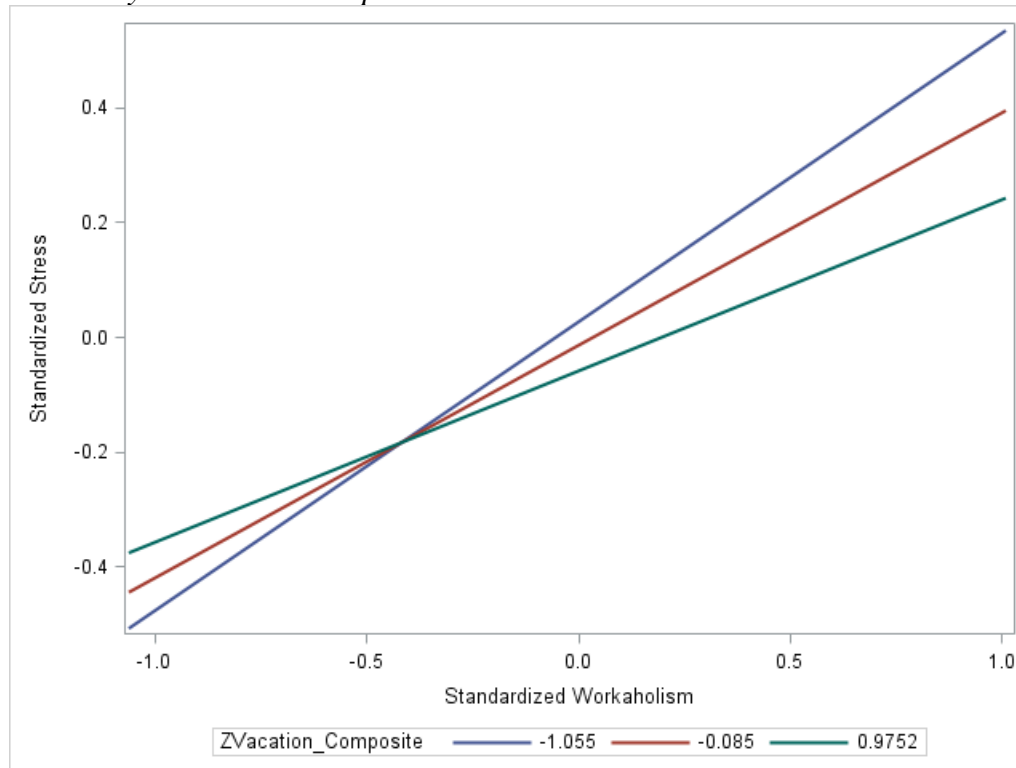
After sequentially dropping the individual leisure activities from the model, participation in leisurely vacation activities was assessed as a moderator. It proved to be a significant moderator of the relationship between workaholism and work stress ( $p = .046$ ), such that as the amount of time involved in leisurely vacation activities increased, the relationship between workaholism and work stress decreased (see Table 4). This relationship was further evaluated using Hayes' (2013) PROCESS macro in SAS. As seen in Figure 1, the slope for predicting work stress from workaholism decreased as leisure participation increased. Vacation participation was assessed at three levels, namely the 16<sup>th</sup>, 50<sup>th</sup>, and 84<sup>th</sup> percentiles. The slopes were .50, 95% CI [.418, .574], .41, 95% CI [.319, .493], and .30, 95% CI [.202, .392], respectively, and were significant,  $p < .01$ . The regression analysis showed these slopes were not coincident,  $F(3, 346) = 25.769$ ,  $p < .01$ .

**Table 4.***Predicting Work Stress from Workaholism and Leisurely Vacation Activities*

Variable	Zero-Order $r$			$\beta$	$sr^2$
	WAQ	Vac	SIG-R		
WAQ	(.921)	-.203**	.414**	.398	.169**
Vac			-.122*	-.042	.023**
SIG-R			(.820)		
$M$	2.488	-.010	2.379	Intercept =	-.019
$SD$	.684	1.004	.374	$R^2 =$	.183

Note.  $N = 350$ . Entries on the main diagonal are Cronbach's alphas. WAQ = Workaholism Analysis Questionnaire; Vac = Measure of participation in leisurely activities while on vacation (standardized); SIG-R = Stress in General - Revised.

\*  $p < .05$ , \*\*  $p < .01$ .

**Figure 1.***Leisurely Vacation Participation as a Moderator Between Workaholism and Work Stress.*

Question 4 considered a single hypothesis whereby time pressure was proposed as a potential moderator between workaholism and work stress (Q4:H1), such that increased

perceptions of time pressure would strengthen the relationship. This hypothesis was tested using a multiple regression analysis and was supported by the data. In a model containing the WAQ x TP interaction term, the overall WAQ term, and the composite measure of time pressure, time pressure was a significant moderator of the relationship between workaholism and work stress ( $p = .011$ ), thereby supporting Q4:H1. This can be seen in Table 5. Similarly, the main effects for this interaction can be seen in Figure 2. The slopes for predicting work stress for workaholism were significant ( $p < .01$ ) across all levels of time pressure. Slopes were assessed at the 16<sup>th</sup> (.51, 95% CI [.429, .583]), 50<sup>th</sup> (.44, 95% CI [.352, .520]), and 84<sup>th</sup> percentiles (.29, 95% CI [.191, .383]). These were not coincident,  $F(3, 346) = 27.359, p < .01$ . This indicates that as time pressure increased, the slope for predicting work stress from workaholism decreased.

**Table 5.**  
*Predicting Work Stress from Workaholism and Time Pressure*

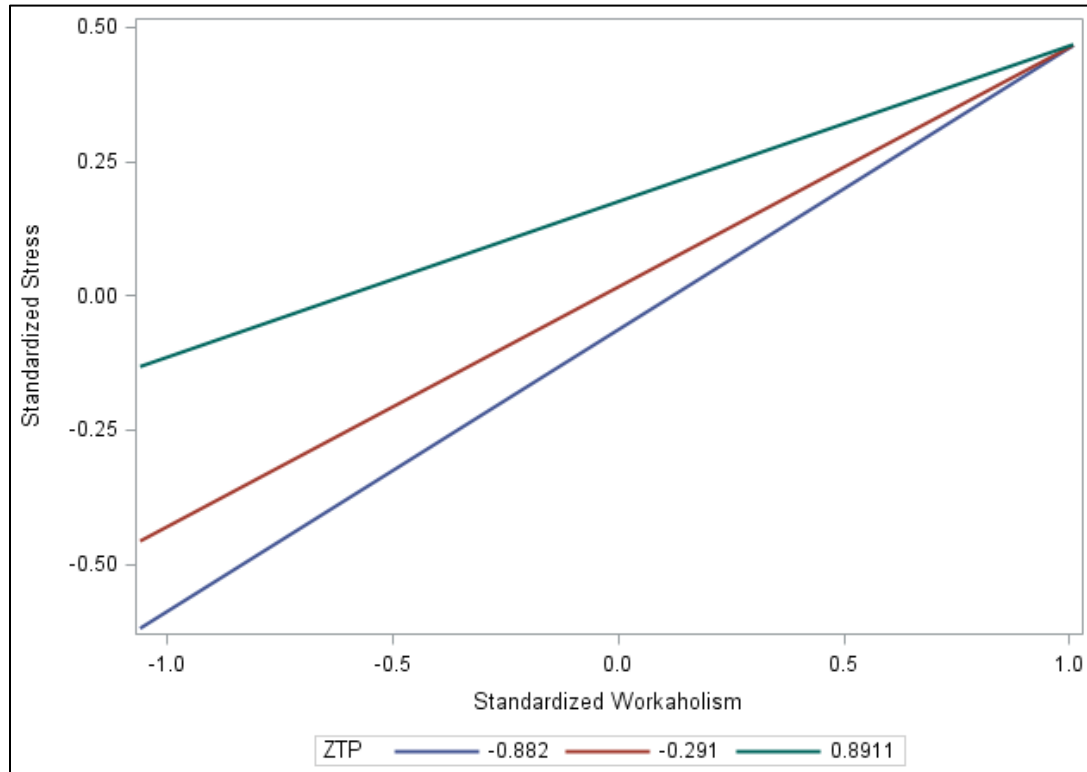
Variable	Zero-Order $r$			$\beta$	$sr^2$
	WAQ	TP	SIG-R		
WAQ	(.921)	.444**	.414**	.403	.123**
TP		(.878)	.246**	.116	.010*
SIG-R			(.820)		
$M$	2.488	.011	2.379	Intercept =	.051
$SD$	.684	.901	.374	$R^2 =$	.192

Note.  $N = 350$ . Entries on the main diagonal are Cronbach's alphas. WAQ = Workaholism Analysis Questionnaire; TP = Measure of time pressure (standardized); SIG-R = Stress in General - Revised.

\*  $p < .05$ , \*\*  $p < .01$ .

**Figure 2.**

*Time Pressure as a Moderator Between Workaholism and Work Stress.*

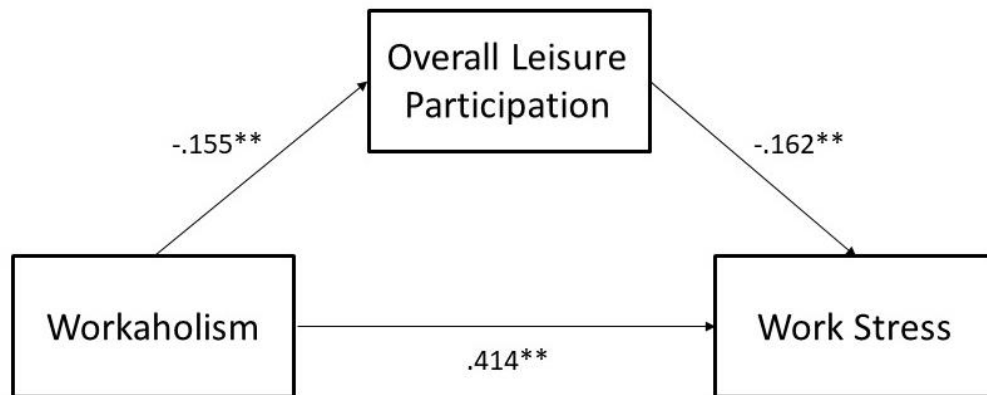


For exploratory purposes and to supplement the moderation analyses, mediation analyses were also considered. The measures for time spent participating in mindfulness and physical activity did not act as significant mediators for the relationship between workaholism and work stress. As previously established, workaholism was significantly related to work stress,  $r_{pb} = .414, p < .01, 95\% \text{ CI } [.324, .497]$ . Likewise, the relationships between overall leisure participation, workaholism ( $r_{pb} = -.155, p < .01, 95\% \text{ CI } [-.255, -.051]$ ), and work stress ( $r_{pb} = -.162, p < .01, 95\% \text{ CI } [-.262, -.059]$ ) were each significant. After further evaluation, time spent engaged in leisurely activities served as a partial mediator of the relationship between workaholism and work stress. This finding suggests time spent participating in leisure activities can explain a portion of the relationship between workaholism and work stress (refer to Figure 3). For this model, the total effect of workaholism on work stress,  $r = .414, 95\% \text{ CI } [.324, .497]$ ,

was divided into a direct effect of .439, 95% CI [.351, .519] and an indirect effect of .025, 95% CI [-.080, .129].

**Figure 3.**

*Workaholism's Relationship to Work Stress as Mediated by Overall Leisure Participation*



Note: \*  $p < .05$ , \*\*  $p < .01$

## CHAPTER IV: DISCUSSION

Oates (1971) first conceptualized workaholism almost 50 years ago. Since then, a meta-analytic review of the construct found it has come to represent an obsessive need to work above the standards of one's typical job (Clark et al., 2016). Characterized by their high work involvement, high work drive, and low work engagement (Spence & Robbins, 1992), workaholics are not assumed to engage in leisurely activities (Clark et al., 2016). However, if they do engage in various leisure activities, then workaholics may experience benefits, such as reduced stress. Thus, in the current study, we aimed to identify non-work activities that could reduce stress in workaholic employees (Clark et al., 2016).

The current study contributes to existing research by validating the associations between specific leisure activities and each of the three dimensions of health ("Constitution of the World Health Organization," 2006). Specifically, mental health may be influenced by mindfulness, physical health by leisurely physical activity, and social health by taking time to enjoy pleasurable and leisurely activities during vacation, although overlap may exist between health-driven domains. All leisure activities explored (i.e., mindfulness, physical activity, and vacation) were thought to provide mental and emotional health benefits to participants, but were most frequently endorsed for mindfulness and vacation activities. Additionally, this study enhances existing literature by focusing on a primary resource (i.e., time) that workaholics perceive as lacking, and the influence this has on work stress. Thus, workaholics' lack of participation in leisure activities is presented as a framing issue.

As hypothesized, workaholism was positively related to work stress (*Q1:H1*). The job demands-control model (Ganster & Perrewé, 2011) suggests that because workaholics lack control over their need to work and the job itself, stress will increase with demands (e.g.,

increased pressure to work, greater workload). Similarly, the ERI model (Siegrist, 2001) may explain the mismatch between the effort workaholics dedicate to their tasks and the rewards they receive. This leads to increased stress.

Conversely, the link between workaholism and work engagement (*Q1:H2*) was not supported in this study; no significant relationship was observed. Previous research suggests similarities as well as differences between the two constructs, which may explain the non-existent relationship. Given that these two worker characteristics emphasize heavy work involvement (van Beek et al., 2012a), they may be more intertwined than previously thought (Di Stefano & Gaudiino, 2019) and both may have been measured by the WAQ. There may also be overlap among the prevention-focused drive of workaholics and the promotion focus inherent to engaged workers, particularly with regard to avoiding negative outcomes (e.g., financial hardship). Alternatively, Choi (2013) suggests the two concepts differ by highlighting the antecedents and consequences of each characteristic (i.e., primarily positive for work engagement and primarily negative for workaholism).

As predicted, work engagement was negatively related to work stress (*Q1:H3*). The JD-R model notes demands are negative aspects of a job, while resources are more positive (Bakker & Demerouti, 2007). As engaged workers tend to view difficult work-related tasks as interesting challenges, the availability of resources may effectively reduce stress that could arise from high job demands (Bakker et al., 2008). This notion further supports the identification of work engagement as a positive characteristic and work stress as a negative one.

Next, the relationships between worker characteristics and overall leisure participation were examined. In this study, the typical person reported participating in less than 20 hours of leisure activity per week (2.857 hours per day), a finding that may be explained by conflicting

life roles ( $N = 60$ , 17.7%) or other constraints (e.g., finances, availability of time). A negative relationship was found between workaholism and participation in leisure activities ( $Q2:H1$ ). Per the ER model (Meijman & Mulder, 1998), by putting effort into tasks, employees may be exposing themselves to greater stress. Similarly, the COR theory states the loss of, or threat thereof, resources can induce stress responses among workers (Hobfoll, 1989), further explaining why workaholics may not engage in leisure activities. Workaholics already have high work-related demands (e.g., compulsion to work, limited time), so imparting additional demands (e.g., splitting limited time between work and leisure) is viewed negatively and tends to be avoided. Furthermore, workaholics may self-select into companies and industries that reward their strong drive to work (van Wijhe-van Iperen et al., 2010).

As expected, the relationship between work stress and leisure participation was negative ( $Q2:H2$ ). In keeping with the ER model (Meijman & Mulder, 1998), engaging in new or difficult leisure activities (e.g., exercise, meditation) could increase distress for participants. That said, leisure activities offer positive benefits, such as feelings of eustress (i.e., positive stress), which can counteract negative stress responses. Given that about 40% of working adults indicate working in very or extremely stressful jobs (Volpone, 2019), it is important to focus on these benefits. In fact, when asked which terms from the SIG-R (Yankelevich et al., 2012) described one's job, respondents most frequently indicated their jobs were demanding ( $N = 238$ , 69.6%) and pressured ( $N = 192$ , 56.3%). Only 15.1% ( $N = 35$ ) referred to their job as being 'calm.' This further explains the negative link between work stress and leisure participation.

Alternatively, a positive association between work engagement and leisure participation ( $Q2:H3$ ) was not supported by the data. As discussed, engaged workers exhibit high levels of vigor, dedication, and absorption (Schaufeli & Bakker, 2004), suggesting they enjoy their work.



Similarly, Greenhaus and Allen (2011) conceptualize work-life balance as including involvement, effectiveness, and satisfaction in the majority of one's life roles. There is clear overlap between engaged worker characteristics and those related to work-life balance. Likewise, the JD-R model may explain this relationship. Provided leisure activities can increase resources to help one manage and enjoy the demands of work (Bakker & Demerouti, 2007), it would make sense for leisure participation to be positively related to work engagement. However, as participants with children scored higher on the UWES-9 than those without, for this sample, perhaps engaged workers have more life roles to balance than less engaged workers and they are not able to fully dedicate themselves to leisurely activities.

Surprisingly, physical activity (*Q3:H1*) and mindfulness (*Q3:H2*), both of which may require relatively low time investment, did not significantly influence the relationship between workaholism and work stress. The lack of interaction between mindfulness, workaholism, and work stress may be explained in part by the type of mindfulness activity participants chose to engage in. Most individuals said they practiced "informal" mindfulness activities, so perhaps they are missing out on benefits provided by structured experiences. Additionally, new experiences can be stressful (Meijman & Mulder, 1998), thus, individuals who immediately experience stress or do not experience positive outcomes may be less likely to continue practicing mindfulness. Similarly, physical activity offers positive health benefits that reinforce participation (van-Wijhe-van Iperen et al., 2010). For workaholics, the added pressure of engaging in a reinforcing activity may increase demands, more so than resources (e.g., time). Alternatively, workaholics do not have a particularly strong drive to avoid or engage in leisure activities (Clark et al., 2016), which might explain why participation in leisurely physical activities did not weaken the relationship between workaholism and work stress. Additionally,

overall participation in leisure activities did not weaken this relationship (*Q3:H4*).

However, leisurely vacation activities weakened the relationship between workaholism and work stress (*Q3:H3*). The DRAMMA model (Newman et al., 2014) may explain any reduction in stress upon one's return to work, as vacations allow workaholics to detach and recover. As workaholics experience stress and corresponding negative health outcomes (Aziz et al., 2015), it is important for employers to recognize ways in which they can reasonably reduce demands (e.g., time pressure) and increase resources (e.g., leisure participation, per the JD-R model; Bakker & Demerouti, 2007). Additionally, vacation was perceived as a reasonable outlet for individuals to relax, recover, and socialize. Most (81.1%) employees surveyed were able to take at least one four-day vacation (or staycation) in the past year, and indicated mental health and socialization as two of the main reasons for taking time off from work.

Although overall leisure participation did not moderate the relationship between workaholism and work stress (*Q3:H4*), the findings demonstrated that overall leisure participation served as a mediator in this relationship. Thus, overall leisure participation partially explains the relationship between the two variables. As proposed, there are potential benefits associated with engaging in multiple leisure activities simultaneously (e.g., focus on mindful breathing while running; Fisher et al., 2017). To further explain this result, it is important to emphasize that participating in both active and passive activities are necessary to fully recover from work-related stress (Cunningham, 2019). Thus, based on the study's findings, it appears workaholics do not typically engage in multiple types of leisure activities, though individuals who do experience less stress.

Workaholics are known for their compulsion to work hard, which limits their participation in leisure activities (Clark et al., 2016). Thus, it was important to consider

additional factors that could influence the relationship between workaholism and work stress. One such factor is the element of time pressure (i.e., perceived inability to complete as much work as one prefers), which was shown to strengthen the relationship between these two variables (*Q4:H1*). Per the JD-R model (Bakker et al., 2007), reducing a major resource (i.e., time), would increase the perception of work-related tasks as being demanding. Unfortunately, when workaholics do not engage in leisure activities, they do not fully detach from work, nor do they obtain the resources necessary to manage work demands.

The primary aim of this study was to identify health-driven leisure activities that could reduce the strength of the relationship between workaholism and work stress. Although mindfulness, physical activity, and overall leisure participation did not influence this relationship, leisurely vacation activities did serve as a moderator, suggesting workaholics benefit from time away from work that is dedicated to improving mental/emotional health and socializing. Time pressure also moderated this relationship. As perceived time pressure strengthens the relationship between workaholism and work stress, dividing tasks among team members and extending project deadlines, when possible, may alleviate some of this pressure.

Although overall leisure participation did not moderate the workaholism—work stress relationship, it acted as a mediator. As suggested by Meijman and Mulder's ER model (1998), employees may expose themselves to greater stress when expending effort on new activities. Similarly, Hobfoll (1989) notes the value of resources (e.g., time, energy) and the need to conserve them (i.e., COR theory). By expending effort on leisurely activities, employees may lose valuable resources and, in turn, experience greater levels of stress. Thus, it seems workaholics would be less likely to engage in leisure activities compared to individuals scoring low on measures of this construct.

## **Study Limitations**

The current study employed the use of Amazon's MTurk platform to obtain survey responses. Although MTurk is a relatively new tool for survey research, it is an appropriate platform for sourcing survey participants. Anson (2018) suggested that participants act in an effortful and attentive manner when completing tasks, regardless of how many surveys they have previously completed or the number of Instructional Manipulation Checks (IMCs) present throughout the survey. These findings hold true for MTurk samples in general, but also when compared to samples from Qualtric's qBus platform. Sheehan (2018) provided several suggestions for best practices with MTurk, including implementation of an upper time limit and utilization of attention-check questions. While imposters may be present in MTurk or any online-sourced participant pool, paying extra to request specific worker characteristics (i.e., age, hours worked per week, location), communicating clearly with participants, and providing fair compensation can ensure data is as valid and reliable as that collected through other methods (Sheehan, 2018).

Participants in the current study reported a variety of gender identities, races/ethnicities, ages, marital status, income brackets, and educational attainment. This finding aligns with past research that shows MTurk yields diverse participants in terms of demographics (Berinsky, Huber, & Lenz, 2012). Yet, with the majority of participants identifying as Caucasian (82.8%), non-White individuals were not well-represented in the current sample. Thus, our findings may have limited applicability to individuals from other racial and ethnic backgrounds. Although the growth of an aging working population is apparent (Kromer & Howard, 2013), only 1.6% of participants were aged 65 and older. This leaves room for further exploration as workers stay in roles later into their lives.

MTurk provides many benefits to researchers. With regard to gender, race, and ethnicity, Burnham, Le, and Piedmont (2018) noted samples sourced through MTurk are fairly representative of the general US population. Furthermore, Rouse (2015) found samples sourced through MTurk were fundamentally different than those obtained through more typical sources (e.g., undergraduate and faculty pools). Studies featuring MTurk-sourced samples may improve researchers' abilities to generalize findings to the overall population. Additionally, Kees, Berry, Burton, and Sheehan (2017) suggest that when compared to other professionally sourced samples (e.g., Qualtrics, Lightspeed), MTurk samples were more affordable, reliable, and descriptive (when responding to open-ended questions).

The use of self-report data is also potentially limiting, as individuals may intentionally or unintentionally skew their responses, thereby providing an inaccurate representation of their work-related tendencies. However, Conway and Lance (2010) did not find this to be a concern, citing the construct validity of self-report ratings and evidence refuting claims that self-reports are inferior to other methods. Gonyea (2005) further supported the use of self-report data in that provided questions are clear, easily understood in the context of a respondent's own life, warrant thoughtful consideration, and response options are both relevant and appropriate. Gonyea also states that the majority of researchers find the use of self-report data to be both valuable and necessary. Self-report surveys tend to be valid and are most useful when researchers have an awareness of appropriate survey design techniques and the context in which survey items will be presented. Thus, the collection of self-report data was appropriate for the current study, in which participants' unique perspectives and experiences were evaluated.

Another limitation pertained to the methods used for assessing participation in leisure activities. Well-known scales, such as the International Physical Activity Questionnaire (IPAQ),

request individuals to report participation in physical activities in terms of the number of days engaged per week and the number of minutes per typical days (International Physical Activity Questionnaire, 2005). An exploration of existing research presented no insight into whether reporting number of hours or percentage of time was a more reliable or valid measure of one's participation in leisure activities. As such, a composite measure combining hours *and* percentages of participation time was developed in the current study. This is believed to be a novel way for assessing individual participation time, and it provides the opportunity to further establish any of these methods as a best practice.

Lastly, the cross-sectional design of this study limited participants' responses to a single point in time. In this study, workaholism was conceptualized as a compulsive need to work excessively (Clark et al., 2016). However, with a cross-sectional design, situational factors cannot be considered. As some responses suggest, various life factors (e.g., external pressure to meet deadlines, need for additional pay) influence an individual to work more than 40 hours per week. Additional data points could provide greater insight into the potential role external factors play in workaholism, and may allow researchers to identify causal links among workaholism and other variables. Identifying the situational factors related to employees' sustained need to work excessively and compulsively could help in the management of workaholic tendencies and stress.

### **Organizational and Practical Implications**

Currently, the methods for reducing workaholic tendencies in employees are not clear. Thus, it is important to recognize the availability of health-driven benefits obtained by participating in leisurely activities. Although workaholics may self-select into organizations and industries that support their "work-first" mentality, employers need to model behaviors and enact policies that encourage employees to dedicate time to non-work pursuits. For example, to ensure

employees do not engage in work-related activities while on vacation, employers could restrict email access while away from the office and mandate all company-owned devices be left with the organization prior to vacation. Requirements like these may increase stress leading up to vacation, but may allow employees to experience the fullest benefits of vacation time. Increased pre-travel stress is typical and would not be unnecessarily harmful to employees. Westman and Etzion (2002) report that for standard business trips, pre-travel overwork and planning contribute to increased stress. Once on vacation, employees should engage in various leisure activities, as these may allow them to detach and recover from work (Newman et al., 2014), while increasing resources (Bakker & Demerouti, 2007). As shown by de Bloom et al. (2014), doing so may contribute to reduced stress levels upon return to work.

When considering workaholics' motives, the prominent drivers of overtime work are extra pay and looming deadlines. This finding suggests workaholics' struggle to disconnect from work is perpetuated by several factors (Sussman, 2012). Whether employees self-select into an environment that encourages such behavior, or they find themselves within a workplace that allows compulsive work-related tendencies, they can truly benefit from having supervisors and co-workers who value and encourage time spent away from the office.

In the current study, health domains (i.e., mental, physical, and social health) were linked to leisure activities (i.e., mindfulness, physical activity, and vacation), with mental health being cited as a primary motive for both mindfulness and vacation. Additionally, mental health served as a close secondary motive for participation in physical activities, following physical health. This strengthens the theory that leisure promotes health, though mental health was most frequently supported. Therefore, employers could offer or sponsor mentally-driven activities (e.g., mindfulness, physical activity) in and out of the workplace to encourage employees'

overall well-being (e.g., company picnic, kickball team, guided lunchtime meditations).

Alternative practices can be established to help reduce the burden on individuals who typically work more than 40 hours per week. For example, company bonuses and employee scholarship funds could be implemented to provide financial incentives not driven by working longer hours. Additionally, when applicable, flexible deadlines and shared responsibilities within work teams could reduce the pressures of looming due dates. Although a sense of urgency is likely to persevere in select industries (e.g., medical, legal; Koenig, 2019), it is important for employers and co-workers to support nonwork-related pursuits outside of these busy times and, when possible, within these periods, regardless of one's compulsion to work. This finding supports a call to action for organizational change related to work-life balance. It is vital for employers to weigh the costs and benefits associated with leisure-driven cultural change.

### **Conclusions and Directions for Future Research**

In the current study, existing workaholism, work engagement, work stress, and leisure research is supported and expanded on in several ways. First, the health-driven motivation of select leisure activities was validated. Second, the question of whether to assess leisure participation in hours or percentages of time was explored. This seems to be unexplored in existing literature and may be valuable when collecting time-based data. Third, the results highlight the influence of time pressure on the relationship between workaholism and work stress. As 44% of workers indicated pressure to meet deadlines as a reason to work more, it seems time and other situational factors may play a role in this relationship. Fourth, the positive influence of leisurely vacation activities on the relationship between workaholism and work stress is notable. By disconnecting to take vacations, workaholics may relieve and/or experience less work-related stress. Finally, the potential for overall leisure participation to partially explain



the relationship between workaholism and work stress is underscored.

By emphasizing the overlap between and potential benefits of the three leisure activities examined in the current study, organizations can employ industrial-organizational psychologists to design appropriate work-life interventions for workaholics and stressed workers alike. While this is just a small portion of the larger picture for employees, both employers and employees need to recognize the value of vacation time and encourage employees to spend allotted time away from work. By further exploring and emphasizing the benefits of vacation and personal conflict associated with time pressure, employers can start to revise existing policies and corporate cultures to better serve compulsive and stressed employees.

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## APPENDIX A: IRB APPROVAL LETTER AND INFORMED CONSENT DOCUMENT



EAST CAROLINA UNIVERSITY  
**University & Medical Center Institutional Review Board**  
4N-64 Brody Medical Sciences Building · Mail Stop 682  
600 Moye Boulevard · Greenville, NC 27834  
Office 252-744-2914 · Fax 252-744-2284  
[rede.ecu.edu/umcibr/](http://rede.ecu.edu/umcibr/)

### Notification of Exempt Certification

From: Social/Behavioral IRB  
To: [Brittany Meier](#)  
CC: [Shahnaz Aziz](#)  
Date: 11/11/2019  
Re: [UMCIRB 19-002725](#)  
Three Facets of Employee Wellness: The Potential Moderating Influences of Physical Activity, Mindfulness, and Vacation

I am pleased to inform you that your research submission has been certified as exempt on 11/11/2019. This study is eligible for Exempt Certification under category # 2a.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
Consent Paragraph(0.01)	Consent Forms
Recruitment Document (1)(0.02)	Recruitment Documents/Scripts
Survey(0.01)	Surveys and Questionnaires

For research studies where a waiver of HIPAA Authorization has been approved, each of the waiver criteria in 45 CFR 164.512(i)(2)(ii) has been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

You are being invited to participate in a **research** study titled “Three Facets of Employee Wellness: The Potential Moderating Influences of Physical Activity, Mindfulness, and Vacation on Select Worker Characteristics” being conducted by Brittany Meier, graduate student at East Carolina University in the Psychology Department. The goal is to survey 400 individuals through Amazon’s Mechanical Turk (MTurk) platform. The survey will take approximately 10-15 minutes to complete. It is hoped that this information will assist us to better understand the relationship between work styles, physical activity, mindfulness, and vacation. Your responses will be kept confidential and no data will be released or used with your identification attached. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Once you have completed the survey, you will be compensated \$0.20 for your participation. Please call Brittany Meier at 814-404-2952 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

## **APPENDIX B: DEVELOPED MEASURES**

### **Mindfulness**

The following questions assess your engagement in mindfulness-based activities.

1. What types of mindfulness-based activities do you choose to engage in during your leisure (non-work) time? Select all that apply.
  - Mindfulness meditation (“formal” practice of mindfulness in which one focuses attention on a particular aspect of experience such as the breath, body sensations, or movement as it unfolds moment-to-moment, with simultaneous awareness of other stimuli that arise such as thoughts, feelings, and sounds, and doing so with a nonjudgmental and accepting attitude toward whatever arises. Common mindfulness meditation practices include breath awareness, body scan, mindful walking/movement, and loving kindness)
  - Yoga (a mind-body practice combining physical poses, controlled breathing, and meditation or relaxation)
  - Tai Chi (a graceful form of exercise involving a series of movements performed in a slow, focused manner, accompanied by deep breathing)
  - Qi-Gong (a gentle form of exercise that combines movement, meditation, and regulation of breathing to enhance the flow of qi – vital energy – in the body)
  - “Informal” practice of mindfulness (e.g., engaging mindfully in everyday life activities – eating, washing dishes – by staying focused, engaged and completely absorbed in the present moment with a calm awareness of and non-judgmental and accepting attitude toward whatever arises)
  - Other mindfulness-based practice(s), please specify \_\_\_\_\_



2. What is the main reason for choosing to engage in these mindfulness-based activities?
- Physical health (e.g., blood pressure, cardiorespiratory fitness, strength, flexibility, weight, metabolism)
    - i. Physical appearance (e.g., body weight, shape, size, muscularity)
  - Mental/emotional health (e.g., stress, feelings of anxiety or sadness, positive well-being)
    - i. Stress management/reduction/prevention
    - ii. Managing/reducing/preventing symptoms of anxiety, sadness, etc.
    - iii. Positive well-being (e.g., feeling happy, content, etc.)
    - iv. Disengagement from work and other responsibilities
    - v. Improved physical appearance (e.g., weight, size, shape, muscularity)
    - vi. Personal enjoyment
    - vii. Disengagement from work and other responsibilities (e.g., forgetting about responsibilities, taking a break)
    - viii. Skill building (e.g., developing mastery skills, developing self-control)
  - Socialization (e.g., companionship, connection with like-minded people, comradery, helping others, competition)
  - Spirituality (e.g., identifying personal values, understanding the self, connecting with a higher power)
  - Other, please specify \_\_\_\_\_

## Physical Activity

The following questions assess your engagement in leisurely physical activities. Physical activities are experiences during which skeletal muscles are moved to expend energy.

1. What types of physical activities do you choose to engage in during your leisure (non-work) time? Select all that apply.
  - Exercise (e.g., running/jogging, walking, weightlifting, swimming, cycling, elliptical or other cardio machine, strength training group fitness classes, cardio/aerobic group fitness classes, and/or other physical activities of a similar nature)
  - Sports (e.g., non-work affiliated team or individual recreational or competitive athletic events)
  - Housework (e.g., vacuuming, mopping, doing laundry, washing dishes, cooking, sweeping, shopping, walking the dog)
  - Yardwork (e.g., mowing the lawn, weeding, raking, gardening)
  - Other types of physical activities you choose to do in your leisure time (e.g. sex, dancing, and/or other physical activities that do not explicitly fit in the other provided categories)
  - None
2. What is the main reason for choosing to engage in these leisurely physical activities?
  - Physical health (e.g., blood pressure, cardiorespiratory fitness, strength, flexibility, weight, metabolism)
    - i. Physical appearance (e.g., body weight, shape, size, muscularity)

- Mental/emotional health (e.g., stress, feelings of anxiety or sadness, positive well-being)
  - i. Stress management/reduction/prevention
  - ii. Managing/reducing/preventing symptoms of anxiety, sadness, etc.
  - iii. Positive well-being (e.g., feeling happy, content, etc.)
  - iv. Disengagement from work and other responsibilities
  - v. Improved physical appearance (e.g., weight, size, shape, muscularity)
  - vi. Personal enjoyment
  - vii. Disengagement from work and other responsibilities (e.g., forgetting about responsibilities, taking a break)
  - viii. Skill building (e.g., developing mastery skills, developing self-control)
- Socialization (e.g., companionship, connection with like-minded people, comradery, helping others, competition)
- Spirituality (e.g., identifying personal values, understanding the self, connecting with a higher power)
- Other, please specify \_\_\_\_\_

## Vacation

The following questions assess your engagement in vacation. Vacation is an uninterrupted period of time away from work, lasting a minimum of 4 consecutive days. Vacation does not include sick days or days off to care for a sick parent, child, etc.

1. How many vacations (periods of at least 4 consecutive days away from work) have you had in the last year?
2. On average, how many days have your vacations lasted during the last year? If you have only had one vacation in the past year, indicate how many days that one vacation lasted.
  - a. \_\_\_\_\_ days on average
  - b. I have not taken a vacation within the last year.
3. How long ago (in days, weeks, and/or months) did you begin your most recent vacation (i.e., at least 4 consecutive days away from work)?
  - \_\_\_\_\_ days \_\_\_\_\_ weeks \_\_\_\_\_ months
  - I have not taken a vacation within the last year.
4. How many days was your most recent vacation? \_\_\_\_\_ days
5. What is the main reason for choosing to engage in vacation?
  - a. Physical health (e.g., blood pressure, cardiorespiratory fitness, strength, flexibility, weight, metabolism)
    - i. Physical appearance (e.g., body weight, shape, size, muscularity)
  - b. Mental/emotional health (e.g., stress, feelings of anxiety or sadness, positive well-being)
    - i. Stress management/reduction/prevention
    - ii. Managing/reducing/preventing symptoms of anxiety, sadness, etc.

- iii. Positive well-being (e.g., feeling happy, content, etc.)
- iv. Disengagement from work and other responsibilities
- v. Improved physical appearance (e.g., weight, size, shape, muscularity)
- vi. Personal enjoyment
- vii. Disengagement from work and other responsibilities (e.g., forgetting about responsibilities, taking a break)
- viii. Skill building (e.g., developing mastery skills, developing self-control)
- c. Socialization (e.g., companionship, connection with like-minded people, comradery, helping others, competition)
- d. Spirituality (e.g., identifying personal values, understanding the self, connecting with a higher power)
- e. Other, please specify \_\_\_\_\_

### **Participation Time**

The following items assess the amount of time you spend participating in specific activities.

1. About how many hours during a typical week in the last month did you engage in mindfulness-based activities?
2. About how many hours during a typical week in the last month did you engage in leisurely physical activities?
3. On your most recent vacation, about how many hours during a typical day did you engage in leisurely or pleasurable activities?

### **Participation Rates**

The following items assess the percentage of time awake you spend participating in specific activities.

1. About what percentage of waking hours during a typical week in the last month did you engage in mindfulness-based activities?
2. About what percentage of waking hours during a typical week in the last month did you engage in leisurely physical activities?
3. On your most recent vacation, about what percentage of waking hours during a typical day did you engage in leisurely or pleasurable activities?

### Time Pressure

The following items assess the frequency with which you feel that participation in specific activities limits the amount of time you could spend working.

1	2	3	4	5
Never	Less than half of the time	Half of the time	More than half of the time	Always

1. How often after participating in mindfulness-based activities do you feel that you do *not* have enough time to work, but would have, had you *not* participated in these activities?
2. How often after participating in physical activities do you feel that you do *not* have enough time to work, but would have, had you *not* participated in these activities?
3. How often after taking a vacation do you feel that you do *not* have enough time to work, but would have, had you *not* taken a vacation?